AIR CONDITIONING & REFRIGERATION news

The Newspaper of the Industry

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INSIDE DOPE

Learn to live and laugh—
Thus delay your epitaph

By GEORGE F. TAUBENECK

Stories of the Week
Verse of the Week
Philosophy of the Week
All the News That Fits the Print
More Newspaper Boners
A Man Is Known By . . .
Staff Memo
Customers Always Write

Stories of the Week

First prize at Detroit's 1955 Ideal Home Contest was a completely furnished house. Contest resulted in a tie between Mrs. Caroline Moffatt and Mrs. Irene Simon. Now hear this:

Each came within one unit of guessing the correct number of spikes, nails, and brads contained in the model home. BUT—

To win her share Mrs. Moffatt enlisted the scientific aid of her brother-in-law, who is an electrician and mathematician. Mrs. Simon was all woman, to wit:

"My husband and I visited the exhibit March 6. It was his 58th birthday. I added my age, 53, and the date, and came up with the winning 58,536."

Friend of ours always liked to travel first class. Having been told that he had an incurable ailment, he shopped around for the best casket money could buy.

"Maurice," he bragged to his partner, "I go out in style. Bought me a $4,000 casket. Best there is."

His partner wasn't impressed.

"For $500 more," the latter dissatisfied, "you could be buried in a Cadillac."

And for the following wondrous anecdote we are indebted to Harry Alter:

Dear Miss Fairfax: I have a problem: I have two brothers and two sisters. One brother is a distributor, the other was just sentenced to death in the electric chair for murder.

My mother died of insanity when I was three years old. My two sisters are prostitutes and my father sells marijuana.

Recently I met a girl who was released from a reformatory where she served time for smothering her illegitimate child, and I want to marry her. My problem is:

If I marry this girl shall I tell her about my brother who is a white goods distributor?

Verse of the Week

It may be Here is heaven.
It may be Now is hell.
How like our journey to our end,
God knows but does not tell.

—SISTER MARY CATHERINE

Philosophy of the Week

Words are the little stitches with which we weave the fabric of ideas. They are the bricks to hold and exhibit our thoughts, that others may observe the workings of our minds. They are the weapons with which we fight to win a place for our convictions—and just to best

(Concluded on Page 11, Col. 1)

Trade Practice Meeting Set for Chicago May 20

WASHINGTON, D. C. — The opening conference for the purpose of establishing trade practice rules for the refrigeration and air conditioning contracting industry has been called by the Federal Trade Commission for 10 a.m. (Central Daylight Time) Friday, May 20, at the press gallery of the La Salle hotel in Chicago.

Any interested party has been invited to attend this initial conference on trade practice rules, without regard to the matter of whether he is active in refrigeration and air conditioning contracting work.

The hearing will be conducted by Federal Trade Commissioner Robert T. Secrest. The Refrigeration & Air Conditioning Contractors Association of Chicago will act as "host" at the conference.

In its announcement about the conference, the FTC is said to define the industry as "those refrigeration and air conditioning contractors engaged in the sales, engineering, installation, and maintenance of commercial and industrial refrigeration, and commercial, industrial, and residential air conditioning."

The conference will consider a set of tentative trade practice rules submitted by Refrigeration & Air Conditioning Contractors Association (RACCA, national) and then a committee will be appointed to prepare a formal set of trade practice rules, after which the FTC will conduct further hearings.

Open Front Groceries Predicted for '75

WASHINGTON, D. C. — Completely open front grocery stores, with the outside separated from the inside only by a curtain of air —cool in the summer, warm in the winter.

Many of the items available inside equipped with chemical heating or cooling units so the housewife can cook or cool them instantly right in the package.

Automatic "eyes" opening and closing windows and doors in homes as the weather changes—

(Concluded on Page 29, Col. 4)

Nashville Sales of Room Units May Double In '55

NASHVILLE, Tenn. — Indications are that area sales of room air conditioners this year will nearly double the 9,000 sold last year, according to William D. Hall, sales promotion manager for Nashvill Electric Service.

He added: "Estimates are that approximately 4,500 room units have been sold this year to date."

Hall also reported that March sales of five electrical appliances through Davidson county dealers for use on NES lines in the country were nearly 25% ahead of March, 1954. The appliances are refrigerators, freezers, clothes dryers, ranges, and water heaters.

"Total sales amounted to 1,868 units, compared with 1,501 for March of last year," Hall said. "Sales in March this year were greater than in January and February," he stated.

N. C. Establishes Refrigeration Examining Board

RALEIGH, N. C.—A bill to establish a state board of refrigeration examiners was written into law May 5 by the North Carolina senate, following third reading.

The new legislative act establishes a 7-member board of examiners. The board will examine and license refrigeration contractors in towns and cities with more than 10,000 population.

The act takes effect on Jan. 1, 1956.

The examining board will be dominated by the industry. It will be made up of four representatives of the industry plus one member from the state board of health, one from the division of public health of the Greater university, and one from the engineering school of the Greater university.

L. L. Carter, president of the Refrigeration Trade Association of America, and H. W. Welker, president of the Air Conditioning & Re-

(Concluded on Page 4, Col. 4)

Commercial Cabinet Shipments Up 25% In First Quarter

TRENTON, N. J. — Combined first-quarter shipments to members of the Commercial Refrigerator Manufacturers Association increased nearly 25% over the same period in 1954, according to a report made by Paul H. Sullivan, executive secretary of CRMA, during the group's recent annual Spring meeting.

The meeting was held in conjunction with the association's fifth annual plant-tour and production conference, at which C. V. Hill & Co. here was host to nearly a hundred key sales, management, and production executives.

After hearing the report on first quarter sales, the majority of the group, after making allowances for a leveling off of present demand later in the year, were of the opinion that 1955 sales of commercial refrigerator equipment should exceed last year's total by at least 20%, which would make it the best year in the industry's history.

It was also brought out, in the meeting presided over by Edwin B. Ahrens of The C. Schmidt Co., president of CRMA, that while members had reasonably good profit records in 1954 and are continuing to enjoy moderate margins this year, extreme vigilance must be devoted to the task of mini-

(Concluded on Page 17, Col. 1)

Cheyenne Ordinance Calls For Water Conservation

CHEYENNE, Wyo. — All new cooling, heating, and industrial processing systems using city-supplied water will have to be equipped with approved water conservation devices under terms of an ordinance adopted recently by the City Council.

The ordinance further provides that "existing cooling systems having a capacity of 2 tons or more of refrigeration and every cooling, heating, and industrial water use device using in excess of 20,000

(Concluded on Page 29, Col. 2)

A-Bomb Tests Point Up Role for Refrigeration, Air Conditioning In Civil Defense Planning

By Phil B. Redeker

LAS VEGAS, Nev.—Frozen food which had been stored in a chest-type food freezer less than one mile from "ground zero" (point of explosion) of a nuclear device (A-Bomb) was eaten by a "taste panel" five days after the explosion occurred, and was voted "thoroughly edible."

Shortly after the explosion at the test site, the frozen food had been checked for radioactivity; and so little was found—less than one milli-Roentgen on the inside of the packages—as to be of practically no significance.

Furthermore, while the Frigidaire food freezer in which the frozen food was stored suffered a fair amount of damage from the explosion, the estimated overpressure of better than 5 p.s.i. from the blast at the 4,700-ft. line having bent in and partially sprung the freezer lid, the cabinet nevertheless held the foods in frozen condition until they were checked and removed a day later.

(These reports, made by damage survey teams and project officers such as Herman P. Schmitt of the National Association of Frozen Food Packers, bear out the on-the-spot summary reported in last week's issue of the NEWS, to the effect that "the household refrigerator and freezer will be as safe a place as there is in the ordinary home to protect foodstuffs from the effects of a nuclear explosion.")

The refrigeration mechanism in the freezer was not damaged to the extent that it would have been inoperative, in the estimate of Edwin J. Miller, Frigidaire physicist who was an observer at the tests. This despite the considerable damage done to other interior furnishings in the one-story house of slab-type construction.

A Servel gas refrigerator, installed in the same house with the food freezer, showed considerable damage to the door and unit compartment, but from what could be ascertained on inspection of the unit, it could have apparently been made operative without major repairs. And it certainly would have protected well any foodstuffs that it held.

In a frame house at 5,600 ft. which sustained considerable damage, an Admiral refrigerator had a door pulled out of jam, possibly from the "negative pressure effect" of the blast, and the interior shelving was disarrayed somewhat, but the refrigeration system was not out of working order, and the refrigerator could have been made good as new with very little work on it.

At the 10,500-ft. mark a frame house which suffered considerable damage to the rest of its furnishings, housed a complete complement of Frigidaire appliances, including refrigerator, range, and

(Concluded on Page 30, Col. 1)

American Blower Has Floor-Type Packaged Air Conditioner Line

DETROIT—A new line of floor-type commercial package air conditioning units, first ever produced by the company, featuring lower over-all height, is now available from American Blower Corp.

The new self-contained conditioner design is available in 3, 5, 7½, 10, and 15-ton sizes.

American Blower's new line will be sold exclusively through distributors in all territories. Initial sales activities will cover a few selected areas only.

Distributors of American Blower

(Concluded on Page 4, Col. 4)

Jordon Introduces 3-Model Upright Line, Built-Ins

NEW YORK CITY—A three-model line of upright home freezers and the first of a new line of built-in freezer-refrigerator combinations custom-designed for multiple uses in any kitchen were shown at the Waldorf-Astoria hotel here recently for the first time by Jordon Refrigerator Co.

The 1955-56 upright freezer models and their retail prices are: JD-13, $499.50; JD-17, $599.50; and JD-23, $749.50. Gross cubic foot capacities of the units were given as 11.37, 15.41, and 21.21, respectively.

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York Sales, Earnings Down for Six Months; Rise Noted In Feb.

YORK, Pa.—Sales and earnings of York Corp. in the six months ended March 31 declined from the like 1954 period, but there was a sharp improvement in orders for quick shipment beginning in February, according to Stewart E. Lauer, president.

March reflected this change, he pointed out, with net earnings of $585,000, up 65% from a year earlier. Lauer added: "We expect this general improvement to continue through the third quarter."

Gross sales of the company for the six months ended March 31 totaled nearly $32.3 million, compared with more than $44.4 million in the corresponding period of fiscal 1954. Net profit was $95,800, against $1,155,015 in the like period of fiscal 1954.

York had reported a net loss of $392,779 for the three months ended Dec. 31.

Lauer said the company's present forecasts "indicate that sales of air conditioning and refrigeration products and systems in fiscal 1955 should equal or exceed this same class of business reported last fiscal year."

Since early February, York's manufacturing employment has risen by 1,175 and is continuing to increase, he stated. In 1954, the company had an average of about 4,500 employes.

Western No. Carolina Contractors Form Assn.

ASHEVILLE, N. C.—The charter meeting of the newly-formed Western North Carolina Mechanical Contractors Association was held recently at the S & W Cafeteria here.

Officers installed at the meeting were: Al Williams, president; Wilkes Price, vice president; and David Moser, secretary-treasurer.

The new group has been formed by expansion of the former WNC Plumbing & Heating Contractors Association to include electrical, sheetmetal, and air conditioning contractors.

The organization covers the area from Morganton west. All qualified mechanical trades contractors are eligible for membership.

Admiral Will Produce Own Conditioners In Galesburg, Ill. Plant

CHICAGO—Admiral Corp. has announced plans to manufacture its 1956 room air conditioners at the company's Midwest Mfg. Div. plant at Galesburg, Ill.

John B. Huarisa, executive vice president, said that by manufacturing its own air conditioners, the company will be able to make mixed carload shipments of all appliances to its distributors throughout the country.

Admiral also will be able to extend the same high quality control to air conditioners that already exists on refrigerators, home freezers, and electric ranges produced at Galesburg, he stated.

Huarisa said that the air conditioners will be manufactured in existing plant facilities in the southwest Illinois city.

Carrier Uses Fact, Fancy To Advertise Air Conditioning In 'Sat. Evening Post'

SYRACUSE, N. Y.—Fact and fancy are combined in an unusual series of consumer advertisements for Carrier air conditioning equipment aimed at 100 million readers of *The Saturday Evening Post.*

The series of eight, half-page advertisements will run into July, during the heavy buying season for air conditioning, according to Leslie M. Beals, director of advertising and sales promotion for Carrier Corp.

Made up of three cartoon panels in light style, combined with couplets reminiscent of Edward Lear, the series is backed by factual information as to what air conditioning has done for animals, and hence can do for humans too.

Typical is the first in the series. Under cartoon figures of a mouse reading Freud and a horse with neck garlanded with a floral horseshoe, it carries these captions:

"Air conditioned mice make bettter scholars,

Air conditioned horses win more dollars."

And then, under the smiling head of a man,

"Imagine what Carrier air conditioning will do for you."

A small copy block at the bottom cites facts to support the verse and explains how Carrier air conditioning can help people, too.

In the typical ad, this reads:

"Fergus (the mouse) is one of an air conditioned team who were pitted against a non-air conditioned team in a wire-mesh arena. The prize was a chunk of cheese. Fergus and his friends won, and by more than a whisker.

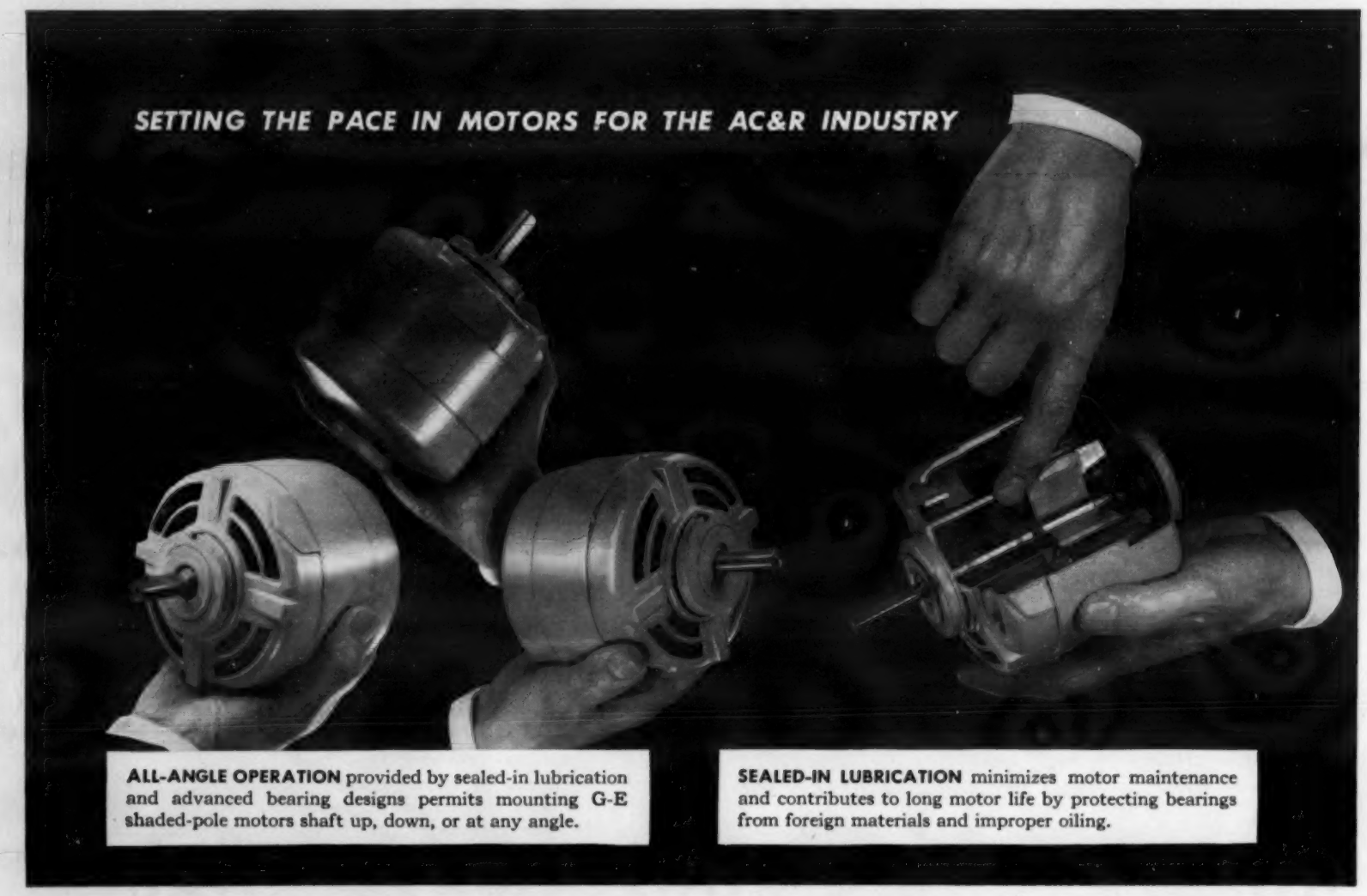
"Eunice is an Irish mare who journeyed to Colombo, Ceylon, to attend the races. At first she found the climate debilitating. Then her stable was Carrier air conditioned. Eunice came home a winner!"

Each ad carries an invitation to readers to visit their local Carrier dealer to obtain a copy of the 24-page booklet "Who's Zoo in Air Conditioning."

Ben-Hur Adds Second Shift As March Volume Doubles

MILWAUKEE—A second shift has been added at the Ben-Hur plant due to rising sales of the company's freezers, it was reported recently by Edgar F. Jackson, vice president in charge of sales for Ben-Hur Mfg. Co.

March sales of the freezers were double those for March, 1954, according to Jackson. He said the increase was the result of a strong sales promotion program and a series of talks made by Bert Hinrichs to distributors and dealers.


SETTING THE PACE IN MOTORS FOR THE AC&R INDUSTRY
ALL-ANGLE OPERATION provided by sealed-in lubrication and advanced bearing designs permits mounting G-E shaded-pole motors shaft up, down, or at any angle.
SEALED-IN LUBRICATION minimizes motor maintenance and contributes to long motor life by protecting bearings from foreign materials and improper oiling.

Advanced design features help make

A MOTOR FOR EVERY APPLICATION
G-E shaded-pole-motor sales manager George Wright and engineering manager E. I. Ross inspect typical models in the most complete shaded-pole motor line available:
1.5 to 16 watt line is applied to condenser cooling fans and unit heaters and coolers.
15 mhp to 1/12-hp line—including G.E.'s new extended-winding models (higher power factor, lower current)—is used for remote unit coolers, and window air conditioners.
New 1/12 to ¼ hp line—most powerful in industry—brings shaded-pole motor economy and multiple-speed operation to larger domestic and commercial air-conditioning equipment.
GENERAL ELECTRIC
1.5 @ 16 WATTS
15 MHP @ 1/12 HP
1/12 @ 1/4 HP

WHEN
QUALITY
COUNTS . . .
Count on
READING
COPPER
TUBING
FOR REFRIGERATION & AIR CONDITIONING EQUIPMENT
READING COPPER TUBE
READING
TUBE CORPORATION
EMPIRE STATE BUILDING
NEW YORK 1, N. Y.
WORKS, READING, PA.

Ruslander and Jewett Announce Plans For $400,000 Expansion Program

BUFFALO—Plans for a $400,000 expansion program, which will include construction of a 35,000-sq. ft. plant, were announced by Ruslander & Sons, Inc. and Jewett Refrigerator Co., Inc.

Harold S. Ruslander, president of both firms, said a sheet metal fabricating plant will be built on a three-acre tract owned by the companies on Dart St. near Letchworth.

George A. Ray Mfg. Co., 94 Pearl St., another firm headed by Ruslander, will move into the space which will be vacant when the two firms move into the new factory.

Both firms now are at 18 Letchworth St.

Ruslander manufactures commercial food service equipment and refrigeration units for plants, hospitals, and restaurants.

Construction of the one-story concrete block plant will start about the end of May. When the plant is completed in five months, machinery from the Ray firm will be moved. Another $100,000 worth of new equipment will be added.

Glass, Porcelain Building Will Be Air Conditioned

TOLEDO — Ground has been broken for a new glass and porcelain enamel two-story office building at 2138 Madison Ave. which will be air conditioned.

The $200,00 project is set for completion around Sept. 1. Herman Bros. Inc. has the general contract. Bellman, Gillett & Richards is the architect and engineer.

T. J. Newcomb Quits Westinghouse Post

METUCHEN, N. J.—T. J. Newcomb, formerly manager of the television-radio division of Westinghouse Electric Corp., has announced that he will retire from the company, effective June 1. He did not announce his future plans.

Newcomb joined Westinghouse at Mansfield, Ohio in 1929 as supervisor of domestic refrigeration when that activity was organized. Four years later, he became coordinator of design and product development at the Springfield, Mass. plant and in 1935 returned to Mansfield as manager of commercial refrigeration.

In 1939, Newcomb was promoted to manager of domestic refrigeration and laundry equipment, which post he held until appointed appliance division sales manager in 1942. He was named manager of the television-radio division in 1952.

Airtemp Heating, Cooling Contest Shows Selling Good In All Sections

DAYTON — Is air conditioning and heating equipment selling better today in one section of the country than it is in another?

"No," replies M. T. Bard, sales manager for Chrysler Airtemp, in issuing a progress report on the "Prizes In The Air" campaign now being sponsored by his company.

Prizes In The Air, which began March 14 and which will conclude June 18, is a special contest for the wholesale salesmen of Airtemp packaged air conditioning, residential air conditioning, and heating distributors.

"We have now passed the halfway mark in the contest and to date exceptionally high scores have been compiled," comments Airtemp's sales manager.

"However, the significant fact is that the performance of wholesale salesmen indicates that business is equally good throughout the country.

"As of May 9, the top 25 men in the contest represent 11 of the company's 13 national sales regions. We expect our other two regions to move into contention quickly as the air conditioning season moves northward.

"Representatives covering southern territories took over early leadership, but during the past two weeks, with the arrival of warmer weather, men from Ohio, Pennsylvania, and New York have moved up rapidly.

"Credits won as the result of sales, while high, are also extremely uniform on a country-wide basis. Score-wise, wholesale salesmen from Texas, Washington, D. C., the West Coast, Indiana, Connecticut, and other areas are running neck and neck. This, too, illustrates that there are no sectional slow or soft spots as far as the cooling and heating business picture is concerned."

UNIT BEARINGS for smaller motors provide larger bearing area, positive rotor alignment. **TWO-BEARING DESIGN** of larger motors permits most compact construction.

3-WAY MOUNTING is offered on most G-E shaded-pole motors: cushion end-rings, thru-bolts, resilient cradle bases. Also available are extra-high bases.

General Electric shaded-pole motors your best buy for 1956 equipment

INDUSTRY'S MOST COMPLETE LINE—1.5 WATTS TO 1/4 HP—MEETS ALL YOUR NEEDS

You see above some of the outstanding features of General Electric shaded-pole motors which best meet your needs for 1956 air-conditioning and refrigeration units. Here are more reasons why these G-E motors provide the low-cost answer to more compact, more powerful air-moving equipment of all types:

COMPACT, HIGH-QUALITY DESIGNS—Created by G.E.'s widely experienced motor engineers, each shaded-pole motor is built to high G-E standards. Unit-bearing design in smaller ratings and two-bearing design in the 1/12- to ¼-hp line each provide the optimum in compactness, quiet operation, and long life.

LONG-LIFE BEARINGS—G-E shaded-pole motors bring you the benefits of sealed-in lubrication. Oil grooves in shaft provide positive lubrication of filtered oil to bearing surfaces.

COOLER OPERATION—Advanced ventilation of G-E shaded-pole motors results in longer life through cooler bearings and windings. Higher efficiency (lower heat loss) of 1/12- to ¼-hp line makes provision for motor ventilation in your products simpler.

EXPERT APPLICATION HELP from G-E engineers is available to you. For complete shaded-pole motor service, contact your local G-E Apparatus Sales Office today. Or write for Bulletin GEA-6134 to Sect. 704-49, General Electric Co., Schenectady 5, N. Y.

Progress Is Our Most Important Product

GENERAL ELECTRIC

McGraw Electric Expected To Announce Its Plans For Coolerator Soon

CHICAGO — Announcement was expected to be made this month regarding plans of McGraw Electric Co. for Coolerator Co., according to Max McGraw, president. McGraw Electric acquired Coolerator last year from International Telephone & Telegraph Corp.

Meanwhile, a spokesman for Samuel Wintermitz Co. announced that machinery, raw materials, and parts at the Coolerator plant will be auctioned in Duluth June 21-23. Wintermitz is auctioneer in charge of the liquidation. Machinery is valued at about $2,000,000 and the raw materials and parts at $600,000, the spokesman for the firm estimated.

McGraw has disposed of most of the Coolerator appliance inventory, it was understood. Coolerator service parts are being transferred from Duluth to Appliance Service Co., Albion, Mich., a company formed by McGraw to handle the servicing of Coolerator products, it was reported.

Kinetic File Folder Gives Independent Views On Value of Conditioning

WILMINGTON, Del.—Independent consulting engineers' views on air conditioning of television studios, office buildings, banks, motels, and department stores are presented in the 1954 Architectural File Folder, available through the Du Pont Co.'s "Kinetic" Chemicals Div.

Issued annually since 1949, the folders contain comprehensive reports on air conditioning installations in specific types of buildings. The 1954 file includes discussions by the following engineers:

C. A. Rackey, manager of audio-video engineering for the National Broadcasting Co., Inc.; Walter B. Moses of Leo S. Weil & Walter B. Moses, consulting engineer, New Orleans; James Mongitore, Mongitore & Moesel, consulting engineer, New York City; L. J. Guarino, director of mechanical engineering for Pan Engineering Co., New York City; and Sidney W. Barbanel, consulting engineer, New York City.

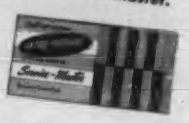
A separate discussion of proper location of air conditioning equipment presents the views of Guy B. Panero, New York City consulting engineer.

The EXTRA FEATURES you get in

Service-Master

make it your best service body buy

Send for this FREE BOOKLET describing all the extra features you get in Service-Master.



Compare Service-Master . . . feature by feature . . . with any other make. See why Service-Master is the first choice of servicemen in all parts of the country.

Available in ½, ¾, 1, and 1½ ton sizes.

"FREEZE-FREE" HINGES
Bronze bushings are provided in door hinges to positively prevent binding.

CONCEALED FENDERS
Dirt, sludge, and water—thrown by the tires—can't reach compartment walls.

"HIGH-LOW" FLOOR
Provides added strength—easier handling of heavy loads.

"NO-BOUNCE" BINS
The hinged cover keeps parts in the bins, and provides an extra storage shelf.

"PUDDLE-PROOF" CARGO AREA
A full-width floor drain is built into the head panel.

Service-Master's competent look helps sell your service . . . reflects your discriminating taste.

McCABE-POWERS AUTO BODY CO. POWERS
5900 NO. BROADWAY • ST. LOUIS 15, MO.

Send me the Service-Master "EXTRA FEATURES" booklet . . . and have nearest distributor furnish me local delivered prices.

Name_____
Company_____
Address_____
City_____ Zone____ State_____

28

BUILT TO OUTLAST SEVERAL CHASSIS

THE MASTER SERVICE MANUALS - - -

— — — and other books of the Refrigeration Library are depended upon as textbooks in trade schools from coast to coast.

BUSINESS NEWS PUBLISHING CO., DETROIT

this beautiful, decorator styled
heating and cooling thermostat puts
. lasting satisfaction and constant comfort
at the fingertips of your customers

IN AIR CONDITIONING...EXPERIENCED HANDS KNOW THE BEST

and prefer GENERAL CONTROLS over all the rest

Quality and dependability are the basic test — in any control.
But that is only one of the reasons why careful buyers look for dealers who standardize on General Controls. They wisely prefer a home comfort system with both heating and cooling installed by the same man — one source, one responsibility for lasting satisfaction.
And customers naturally have the greatest confidence in you when you feel the same way — particularly about controls, the heart of the comfort installation. You, too, can have the greatest confidence when your jobs are standard with General Controls throughout.
Write for complete catalogs today.

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AUTOMATIC
Heating and Air Conditioning
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PLANTS: GLENDALE, CAL. • BURBANK, CAL. • SKOKIE, ILL. • 40 BRANCH OFFICES SERVING THE NATION

MANUFACTURERS OF AUTOMATIC CONTROLS FOR THE HOME, INDUSTRY AND THE MILITARY

FIVE-TON MODEL of American Blower's new floor-type commercial packaged air conditioner is shown here. It is said to be approximately 8 in. shorter in over-all height than conventional 5-ton units. Unique curved blades in cold flow diffuser grille sections direct air up to eliminate cold air drafts. Front panels are individually removable.

American Blower Adds Floor-Type Models--

(Concluded from Page 1, Col. 4)

air conditioning and refrigeration products will perform no installation of system components. They must not be in the contracting business. This is a new concept of distributor operation which is being initiated with the introduction of these units.

The new units with discharge plenums are approximately 8 in. shorter in height than conventional units having comparable capacities, the company said. Reduced height is made possible through use of two specially designed cold flow diffuser grille sections containing unique curved blades which direct the cold air up and away from the conditioner, the manufacturer explained.

Even though diffuser grille height is less than 6 ft., the aerodynamically correct curvature of the blades eliminates objectionable direct cold air flow at head height, the company claims.

In addition, the blades impart a turbulent, swirling motion to the cooled air as it leaves the conditioner, thereby speeding the diffusion of air to all corners of the conditioned area, it said.

With the new low height, the 3 and 5-ton sizes can be shipped fully assembled in one piece, ready for installation.

The new air conditioner has a water-cooled condenser. An extra-heavy layer of Fiberglas insulation functions as a sound deadening medium.

Finished in Leathertex Tan, the long-wearing surface cleans easily with mild soap and water. All exposed corners are rounded.

The packaged units can be provided with steam or hot water coils for heating.

The four-section units are designed to permit individual removal of any section front panel by merely loosening easily accessible screws.

The new conditioners are painted on all surfaces with a rust-inhibiting prime and finish coat. Condensate is permitted to drain into a special drip pan which is provided with an external drain connection.

Special deflectors on the cooling coil prevent the condensate from dripping on the standard throw-away filters.

N. C. Refrigeration Examining Board--

(Concluded from Page 1, Col. 3)

frigeration Wholesalers, along with other prominent refrigeration industry representatives, were instrumental in obtaining support for the measure.

The Legislative Committee of the RTA of North Carolina was under the chairmanship of N. F. Crater, Winston-Salem contractor. This committee engaged the law firm of Broughton & Broughton, Raleigh, which worked closely with C. B. Collins, general counsel of RTA of America, and with the responsible committee of the North Carolina Legislature.

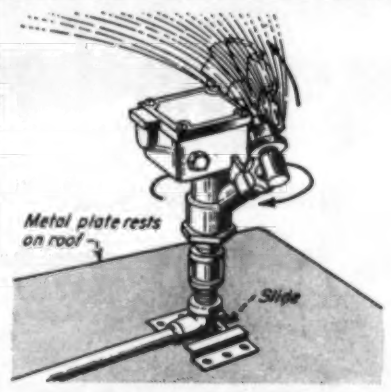
Senator Hightower of Anson, voicing opposition to the measure, called it "monopolistic" and said it would "tend to build a fence around the refrigeration contractors and give them a subterfuge by which they can raise the price to John Smith."

Hightower read to the senate the North Carolina supreme court decision of several years ago which declared a similar board for photographers to be unconstitutional "in order that you will know how the supreme court of North Carolina will look on this (refrigeration) act."

On the other hand, proponents argued that the refrigeration men were caught between the electrical trade on one hand and the plumbing trade on the other, each with its licensing board.

Having a board of their own, said Senator Calvin Graves of Forsyth, "would permit the refrigeration contractors to do the incidental work of plumbing and wiring accompanying the installation of refrigeration systems."

Senator Graves described the refrigeration business as "a highly skilled work" and said most of the objectionable features of the bill had been removed before it left the House. Other amendments added by his committee, said Graves, exempted air conditioning and brought under the "grandfather clause" those refrigeration contractors operating in towns under 10,000 population.



ROOF COOLING
Best Way to Reduce Air Conditioning Costs

Everyone knows how the sun, beating down on the roof of a building, descends into the interior. Even with insulation, this imposes a big load on air conditioning.
Roof cooling is the answer. It can be used on any roof to keep the building cooler and save air conditioning costs. Best equipment for the job is Ruppright's Rotary Roof Cooler. Easily installed, it produces a thin film of water on the roof. This film evaporates but is continuously renewed by the slowly-rotating cooler making the roof cooler than the air.

WRITE FOR FREE FOLDERS

RUPPRIGHT'S
ROTARY ROOF COOLER
P. O. Box 6795n, Los Angeles 22, Calif.

Sees 'Special Deals' Upsetting Dealer Control Over His Inventory

CHICAGO—"The fantastic number of spectacular 'deals' offered appliance dealers today tempts many to forget they make a profit only when they sell and not when they buy."

D. B. Blatz, financial administrator of Crosley and Bendix Home Appliance Divs., made this statement as part of a plea for better inventory controls to the National Credit Congress.

Blatz pointed out that a dealer buying 10 appliances on a special deal usually shows no profit until he has sold the tenth unit.

He urged his audience to help appliance dealers substitute dollar control for percentage control.

"If a small dealer has to have $600 a month income to cover his salary and store expenses," Blatz illustrated, "and can regularly expect to sell 30 appliances a month, it's obvious that he must hit an average profit of $20 per unit. The dollar contribution to reaching and passing the break-even point is far more important than percentages."

Historically, as sales unit volume increases, margin decreases and history is just now catching up with the appliance business which had an artificial volume boom after the war, he said.

Rich Plan To Occupy New Facilities Soon

UTICA, N. Y.—Rich Plan of Utica, Inc. will soon occupy its $100,000 food processing, storage, and office building between Yorkville and New York Mills.

Complete processing and frozen food storage facilities are provided in the new building. Food processing work will be concerned mainly with meat and poultry although there will be freezer storage space for other frozen foods.

Westinghouse Reduces Price On One Refrigerator Model

MANSFIELD, Ohio — Suggested retail price of Westinghouse Electric Corp.'s model THF-115 refrigerator has been lowered to $489.95, a reduction of $30, according to R. J. Sargent, manager of major appliances, who added that dealers will be fully protected on their inventories.

Seeger Dividend Set

ST. PAUL—Directors of Seeger Refrigerator Co. have declared a cash quarterly dividend of 65 cents a share on the company's common stock, payable June 10, 1955, to stockholders of record at the close of business on May 20, 1955.

Charge Icebox Owner With Violation of Law In Los Angeles Deaths

LOS ANGELES—Although ruling recently that the deaths of two boys in an icebox were accidental, a coroner's jury held that the owner of the box had violated the law by failing to remove the door or latch.

Charged with violating Section 402-B of the Penal Code, John Richardson waived a preliminary hearing when arraigned before Municipal Judge Howard D. McClain. He asked for a jury trial, which was scheduled for May 19.

The boys, age 2 and 8, suffocated in the icebox which was kept in a storage shed. Richardson said he acquired the box about six months ago, had removed the shelves from it, and used it for storing chicken feed.

Tide Box Top Worth $40 In 3-Way Promotion

BUFFALO—Kelvinator, Proctor & Gamble, and Loblaw, Inc., supermarket chain, joined recently in a promotion under which a box top from a special large size of Tide was worth $40 toward the purchase of a new Kelvinator automatic washer.

Loblaw announced the offer in a full-page advertisement. Regular price of the washer was listed as $279.95 and the price when the customer took advantage of the deal was $239.95, according to the advertisement.

Consumers were urged to take the top from a giant box of Tide, write their name and address on the reverse side, and take it to a any Kelvinator dealer in order to get the $40 allowance on the automatic washer.

Although Loblaw declined to discuss promotion aims and results, it was believed the offer was an experiment for the chain in tie-in merchandising with national manufacturers without a giveaway gimmick.

Free Pizza, Movie Offer For Appliance Purchase Gets Good Response

CHICAGO — A local appliance dealer got good response recently by offering free spaghetti or pizza for two and tickets to a movie to purchasers of appliances, TV sets, and other items.

The Lincoln Ave. store of Alan Radio & Appliance Co. advertised the offer in the classified ad section of the *Chicago Tribune*. The firm offered such deals as a $450 9.5-cu. ft. refrigerator for $275 and a ¾-ton air conditioner, valued at $445, for $225 during the promotion.

Kelvinator Names Tenney To Western Region Post

DETROIT — Appointment of J. M. Tenney as western regional sales manager for the Kelvinator Div. of American Motors Corp. has been announced by Kelvinator.

J. M. Tenney

Tenney joined the Kelvinator organization in 1948 as a home freezer sales representative. After two years as a regional representative contacting the field organization, he was named manager of Kelvinator's Birmingham, Ala., branch in 1951. He returned to factory headquarters in Detroit as manager of dealer relations in 1953.

Earlier this year he was appointed manager of the company's newly formed major dealer division.

A former high school and college instructor in business administration, Tenney has a broad background in administration, training, and engineering, in addition to merchandising and sales management. Following World War II service with the U. S. Marine Corps, he was chief of merchandising training for the U. S. Surplus property division, and later joined the staff of the Ford Motor Co. merchandising school.

Norge Sales Volume Up 112% for Fiscal Year

CHICAGO — Sales volume of Norge Div., Borg-Warner Corp., for the year ending May 1 climbed 112%—from $46,660,428 to $99,144,718—over the corresponding 12 months ending May 1, 1954.

The $52,484,289 gain was the highlight of a special report issued by the company May 10 at the end of Judson S. Sayre's first year as Norge president.

Outlook for 1955 calendar year promises dollar volume in the neighborhood of $120,000,000, a 50% gain over the 1954 calendar year, Sayre observed.

"In spite of this progress, Norge has barely started its race to a first division berth in the appliance industry," he commented.

He came to Norge in May, 1954, after 30 years in the appliance industry, during which time he launched the first automatic clothes washer, it was noted.

Last year unit sales of Norge appliances doubled the 1953 figure. Sayre attributed Norge growth primarily to a change in the attitude of distributors and dealers who had developed new interest and excitement in the merchandising power of the new Norge.

"With this dynamic change, we started slugging with a planned program of new products, promotions, full-line activities, and merchandising ideas whose dimensions are unlimited," he said.

Until Sayre took over management, Norge struggled to maintain what the industry termed ninth position. Norge rated as high as second in refrigerator sales prewar, and now is headed back toward the first division.

In a special report Sayre cited some of the accomplishments of the Norge management team:

1. A dealer coverage campaign added more than 5,000 carefully selected dealers, 1,200 in October alone, and brought products before 50% more families than ever before.

2. A "radically different" profit-sharing plan paid approximately $1,000,000 to appliance dealers.

3. Plant expansion doubled facilities for the production of automatic washers and dryers.

4. Introduction of new products, such as the low-cost dryer and built-in range added new dimension to Norge potential sales.

Over 5 Million Feet
of aluminum refrigeration tubing is produced every month by . . . . . . **BOHN**

Bulk coils, patterns, specified lengths (with or without connectors) . . . whatever your needs, it will pay you to investigate the savings made possible by Bohn's tremendous tubing production. What's more, Bohn's quarter-century of extrusion experience assures you uniform, high quality every shipment.

EVAPORATORS • FREEZER PLATES • TUBING • REFRIGERATION COILS

BOHN ALUMINUM AND BRASS CORPORATION
1400 LAFAYETTE BUILDING DETROIT 26, MICHIGAN

Sales Offices: • BOSTON • CHICAGO • CLEVELAND • DAYTON • DETROIT INDIANAPOLIS • LOS ANGELES • MILWAUKEE • MINNEAPOLIS • MOLINE NEW YORK • PHILADELPHIA • ROCHESTER • ST. LOUIS

BOHN'S FLASH-BUTT WELDING of copper to aluminum tubing is the most positive method of making connectors.

Residential Air Conditioning

Coleman 'Homecoming' Schools Emphasize Technical Instruction for Its Dealers

WICHITA, Kan.—The most intensive year of dealer training ever undertaken by the Coleman Co. is now under way at the Coleman Institute here..

The "Homecoming" schools are aimed at building an expert dealer force.

Sheldon Coleman, president of the firm, says: "The program has been so successful that it will be continued indefinitely as a permanent part of our relationship with dealers. It's the only feasible way of keeping abreast with the rapid technical advancement in the heating and air conditioning business."

The first weekly Homecoming school was held in March for dealers from Florida, Louisiana, and Texas. The last school will be held in June for dealers from Pennsylvania. Altogether, dealers from all 48 states and the District of Columbia will attend sessions this year.

Dealers at the earlier schools generally have been from warmer states, and air conditioning has been emphasized. Dealers from the north who come to Wichita have the option of specializing in heating or air conditioning at the school.

Instruction is being given this year in enlarged and re equipped refrigeration and electrical laboratories and shops in the Coleman Institute building. Practical installation and service instruction is given on all major types of "Blend-Air" conditioning equipment.

Half of the five-day period is spent in laboratory and shop work. The other half is taken up by classroom instruction, sales clinics, and a factory tour.

The high proportion of time spent in technical training is necessary, according to Coleman, because "greater technical knowledge is required to deal with the company's expanded line of equipment.

Full cost of the Homecoming program is borne by the Coleman Co. and its distributors. The distributors select the dealers who attend.

The Homecoming program of dealer training at the factory follows a series of two-week air conditioning schools for distributors' application engineers. These engineers are now being equipped with films, charts, and other training aids to enable them to carry on additional dealer training in their territories.

Topeka Paper Warns Public To Know Ratings, Capacities Before Buying Air Conditioning

NEWS Editorial Is Basis of Consumer Article

TOPEKA, Kan.—The much-discussed editorial, "We Can't Build a Good Business On Dishonesty," which appeared in the March 21 issue of AIR CONDITIONING & REFRIGERATION NEWS, was cited recently by *The Topeka State Journal* in an article on how to buy an air conditioner.

The "Conscience of the Industry" editorial was written by George F. Taubeneck, editor and publisher of the NEWS. Declaring that the air conditioning industry is currently practicing dishonesty in its capacity ratings, Taubeneck urged the industry to devise an understandable and honest method of rating equipment and live up to it.

The editorial was widely approved at all industry levels. One NEWS reader, Max Lemon of Max Lemon Heating & Air Conditioning Co. here, was so impressed that he showed the editorial to the city editor of *The Topeka State Journal*. The result was publication of the article noted above.

Written by *State Journal* staff writer Don Flynn, the article appeared under the headline: "Will You Get Stung on Your Air Conditioner?" A "tag line" to the head stated: "Dealers Themselves Complain of Manufacturers' Doubletalk."

Excerpts from the article follow:

"When and if you do decide to buy air conditioning, you'll run head-on into a many-sided bugaboo that has dealers and manufacturers of air conditioning units suffering from the screaming meemies. And that is: How should units be rated?

"How do you know when you buy an air conditioner that it will do what it's supposed to do? Should you buy a ton air conditioning unit, or a ¾ ton? Or should you forget about tons and buy according to horsepower? On the other hand, how about B.t.u., or British Thermal Unit, as a basis for buying?

"It's important if you're in the market for a cooling unit. Because if you don't know what rating to go by, you can come up with a nice little pig in a poke—and that at a fancy price.

"No less an authority than George F. Taubeneck of the industry AIR CONDITIONING & REFRIGERATION NEWS has taken up the cudgel for standardized ratings.

"With hopes of clearing up the picture, several Topeka dealers were consulted on how to buy an air conditioner.

"The B.t.u. is the unit for measuring how much heat is removed from air. When a dealer looks over your house, he has to tackle the B.t.u. right off the bat—or at least he should according to two Topeka dealers. He must figure out how much heat has to be removed from your home to drop its temperature to where you want it.

HYPOTHETICAL EXAMPLE

"Let's take a hypothetical example. A dealer looks over your five-room home. He figures on a temperature of 100°—that is, 100° in your home, and 100° outside. He plans to make it 80° inside your home with the air conditioner.

"Hot air will always push in on cooler air. So he works it out like this. If it's 80° inside and 100° outside, how much heat will push into your home?

"The how-much figure comes out in British Thermal Units. For this example, let's say the calculations show that, under the conditions, 24,000 B.t.u. will flow into your home like so many gremlins. Your cooling unit must therefore pump 24,000 B.t.u. to continually re-

(Concluded on next page)

Hot Water Heating Industry Seeks To Recover Portion of Market Lost To Warm Air Heating

NEW YORK CITY—The hot-water heating industry has been turning on the heat with hotter water, more research, and better engineering to recover the large portion of the market it lost to warm-air heating after World War II, reports in the April *House & Home*, homebuilding industry magazine.

Before the war boiler and warm-air furnace sales ran about neck and neck, says the magazine, but in recent years warm-air installations have taken over 65 to 75% of the market.

To meet the competition and cut costs, the magazine points out, the hot-water heating industry is financing research and developing smaller boilers, smaller radiators, and smaller pipes that work just as efficiently or better than pre-war sizes, but cost less for materials. One of the biggest cost cutters, it adds, has been the introduction of systems that use hotter water, heated to 210 to 225 instead of the usual 175°.

"This means higher efficiency, faster pickup, and, most important, radiators or convectors can be as much as 40% smaller," explains *House & Home*. "Savings range up to 10% on the heating job—over $100 saved on a $20,000 house."

Perhaps the biggest new development in hot-water heat is packaged equipment that both heats and cools, according to the magazine. Thus air conditioning is now possible for the first time with boilers and chillers combined in a single unit designed especially for houses, it explains. Either hot or chilled water is circulated through insulated pipes to a variety of new types of year-round convectors, also designed especially for houses.

But so far, the magazine cautions, the installed prices for liquid cooling systems are hard to pin down because equipment is so new.

"Some firms say a 2-hp. year-round air conditioning system with water can be installed in $20,000 houses for as little as $1,850. Others say installed costs may be 20% higher than the cost of home air conditioning with warm-air heat.

Harry Alter's New DEPENDABOOK

GET IT AND SAVE!

No. 162
1955

OVER 10,000 ITEMS
ILLUSTRATED, DESCRIBED AND PRICED

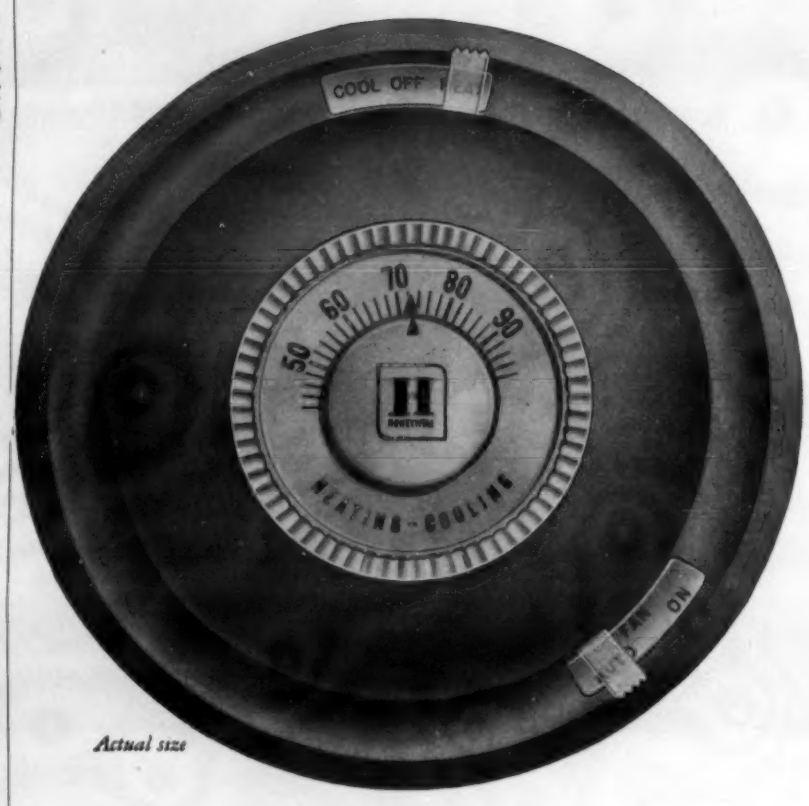
Save Money On
REFRIGERATION
PARTS and Supplies
...Also Electric Motors
& Parts, Air Conditioning
PRICED RIGHT!

"Harry Alter gives you snappy service"

WHOLESALE ONLY

The HARRY ALTER CO. Inc.
1728 S. Michigan Ave., Chicago 16, Illinois
134 Lafayette Street, New York 13, N. Y.
122 Parkhouse Street, Dallas 7, Texas

NOW-The famous Honeywell



Actual size

The new T87A
mounted on Sub-Base

All the advantages of the world's largest selling heating thermostat —plus cooling control

The new T87A is a highly sensitive, low voltage thermostat with heating and cooling anticipation (prevents temperature creep-up before the compressor goes on; also prevents over cooling at the end of the compressor run). Due to its low voltage design it offers extreme sensitivity, and reduced wiring costs. Dust-free mercury switch guarantees dependability. Features the famous Honeywell Round snap-off cover that can be painted to blend with any wall color or interior.

For modernization to cooling when a separate heating thermostat is desired

The new T87C is a high-precision low voltage thermostat for cooling only. Features cooling anticipation which eliminates temperature lag on the beginning and end of the compressor cycle—maintaining precise cooling levels. Low voltage gives high sensitivity and reduced wiring costs. Has reliable, dust-free mercury switch and also features snap-off cover that can be painted to match interiors.

Actual size

The new T87C

(Concluded from preceding page)

move that much heat and keep the house temperature at 80°. Simple, what?

"The next step is electricity and whether to buy a water-cooled job. You'll pay 2 cents a kilowatt hour for electricity in Topeka. Water starts at 37 cents per 750 gals., but drops off to 17 cents when you hit the 1,750 mark. It stays at 17 cents for each additional 750 gals. (Rates vary in different parts of the city).

WATER-SAVER IS MONEY-SAVER

"In dollars and cents, the water costs about $5 per month for each ton of the conditioner. With a water-saver attachment, the cost is less than $1 per month.

"You'll run your air conditioner between 1,000 and 1,500 hours a season, dealers said. So figure it out. Be sure to ask the dealer how many kilowatts it takes to operate your unit for an hour. Multiply that by .02 to get the cost in cents, and by 1,000 to 1,500 to come up with the seasonal electricity cost. Ask how much water it will use, and then figure it out. That's your operating cost.

WHO CAN YOU BELIEVE?

"And now here goes on the rating problem. How do you know any given unit will drive out those 24,000 B.t.u. we mentioned? You take the dealer's word for it. How does he know? He takes the manufacturer's word. But, according to Taubeneck, some manufacturers' figures don't correspond to actual capacity of the unit.

"One big difficulty is that air conditioners are sold as ton air conditioners, or ¾-ton air conditioners, etc. A ton air conditioner is supposed to handle 12,000 B.t.u. But, says Taubeneck, 'some manufacturers imply that horsepower and tonnage are synonymous, particularly in air-cooled units.' This would mean a 1-hp. motor in a unit would give out 12,00 B.t.u. It ain't necessarily so, says Taubeneck, and two of three Topeka dealers say he's right.

"When the 74 manufacturers get through listing their different units by the ton method and the horsepower method and the B.t.u. method, everybody concerned is thinking of buying up a mess of tissue Chinese fans.

REPUTATION IS WHAT COUNTS

"It all boils down to an old maxim: Deal with a reputable dealer whom you can trust.

"When a dealer sells you a 2-ton air conditioner with the understanding it will pump 24,000 B.t.u., and it doesn't, what then? Nothing then, unless the consumer begins hollering. Then the dealer will holler at the manufacturer, and dollar to a doughnut they'll start putting their house in order.

"When you've fought the battle of the ratings, you can sit back and relax. 'Man,' you'll be able to say, 'this is real cool.' "

Amana Offers Ivory Fronts On Budget-Priced Deluxe Lines

AMANA, Iowa — The budget-priced deluxe line of Amana room air conditioners, which until now have been available with brown fronts only, will also be available in ivory, it was announced by Edward H. Lyon, room air conditioner sales manager.

The new ivory front models in the ½, ¾, 1, and 1½-hp. sizes, will be sold at the same prices as the deluxe models with brown fronts, he added.

The ivory front units were added to the line because of the success of the firm's ivory front models in its year-round line of room air conditioners, Lyon said.

Fedders Appoints Two Canadian Distributors

BUFFALO—Two Canadian distributors have been appointed by Fedders-Quigan Corp., room air conditioner manufacturer, according to Robert E. Cassat, sales manager.

In the London, Ont. area, Fedders will be distributed by Benson-Wilcox, Ltd., 188 King St., London. General manager of the firm is J. G. Aselstyne.

Fedders will be represented in the Toronto area by Masco Electric Co., Ltd., 54 Duke St., Toronto. F. C. Taylor is president of Masco.

Re: Capacity Ratings, Performance Claims

Wichita Dealers Adopt Sales, Advertising Standards for Room Air Conditioners

WICHITA, Kan.—Standards for advertising and selling of room air conditioners, promulgated by the local Better Business Bureau, have been adopted by the Wichita Appliance Dealers Association.

The standards have also been adopted by the local newspaper and radio and TV stations, it was reported.

One of the 12 standards pertains to capacity and price. It requires that all advertising quoting selling price or prices of specific units "shall likewise disclose size or cooling capacity of such units measured by the horsepower rating of the compressor as designated by the manufacturer. Capacity shall not be quoted in 'tons.'

"These provisions are subject to change at such time as a uniform system of rating cooling capacity of air conditioners is adopted nationally."

A standard on performance claims bans use of such phrases as "Simply plug in" unless qualified to indicate this applies only to adequately wired buildings.

This standard also states: "Because of wide variations in temperatures, residential construction, insulation, and other factors, no specific claims as to area cooling capacity shall be made."

Text of the standards follows:

PURPOSE: The intent of these standards is to encourage and preserve dependability in advertising and selling room air conditioners. They apply equally to advertising in newspapers, radio broadcasting, telecasting, direct mail, window displays, counter cards, outdoor advertising, and advertising promotion in any form. It is the spirit and intent of these standards that advertising and accompanying practices of advertisers shall be truthful, accurate, clear, free from deception, and fair to customers and competitors alike.

1. DEFINITIONS: The term air conditioner should be used only to describe such equipment which simultaneously performs the minimum function of air conditioning, namely, control of the temperature, humidity, circulation, and filtering of the air. A window-intalled type of room air conditioner should simultaneously cool, dehumidify, circulate, and filter the air.

2. FANS, COOLERS, ETC.: Air coolers, air purifiers, air humidifiers and dehumidifiers, and air circulators such as fans and blowers, as well as any other devices not performing the three minimum functions of an air conditioner, should be described for what they are and should not be described as air conditioners.

3. CAPACITY AND PRICE: All advertising which quotes selling price or prices of specific air conditioner units shall likewise disclose size or cooling capacity of such units measured by the horsepower rating of the compressor as designated by the manufacturer. Capacity shall not be quoted in "tons." These provisions are subject to change at such time as a uniform system of rating cooling capacity of air conditioners is adopted nationally.

4. YEAR OF MODEL: Whenever a price is quoted or featured in an offering of an air conditioner and the conditioner is no longer listed by the manufacturer or sold by the distributor, having been either discontinued entirely or supplanted by another model and being no longer designated by the trade as a current model, the year of the model or the fact that it is a discontinued model should be prominently disclosed.

5. SPECIAL EQUIPMENT OR SERVICE: No advertisements or representations of air conditioners, or prices therefor, should be used which deceptively or misleadingly conceal the fact that the advertised price does not cover necessary or advertised accessories or devices or services which must be purchased with the unit at an additional charge; or which falsely or deceptively state or imply that the advertised price covers such accessories, devices, or service, when such is not the fact.

6. INSTALLATION: No advertisement should state or imply that in every case present electrical circuits are adequate, that alterations in present circuits or wiring are always unnecessary, or that additional expense for electrical installation is never required. Except when the seller is qualified to render direct complete installation in compliance with the licensing law, any mention of installation as such in an adverstiment should clearly indicate that window installation is meant.

7. PERFORMANCE CLAIMS: Performance claims and claims of superiority shall be limited to proven facts, with the evidence readily available on request. Claims such as "Simply plug in," "Operates efficiently on 110-volt current," etc., shall not be used unless qualified to indicate this applies only to adequately wired buildings. Because of wide variations in temperatures, residential construction, insulation, and other factors, no specific claims as to area cooling capacity shall be made.

8. ILLUSTRATIONS: Illustrations of advertised merchandise should conform without exaggeration or essential difference to the appearance of the merchandise actually on sale. If the quantity of any illustrated article is limited, the number available must be stated under or adjacent to the illustration. If an illustration represents only one of many items included in an advertised offer, the fact must be clearly stated. Example: "Unit illustrated represents one of the units offered in this sale."

9. WARRANTIES: Shall be specific as to term, whether applicable to parts or labor, who is making the warranty or guarantee if other than the seller, and should be in writing. A service policy or parts warranty for which a charge is made in addition to the purchase price should be differentiated from any other warranties or guarantees.

10. DECEPTION: Deceptive or fixed trade-in allowances, fictitious list prices, false and exaggerated comparative prices and savings claims, misleading free or rental offers, and bait advertising shall not be used.

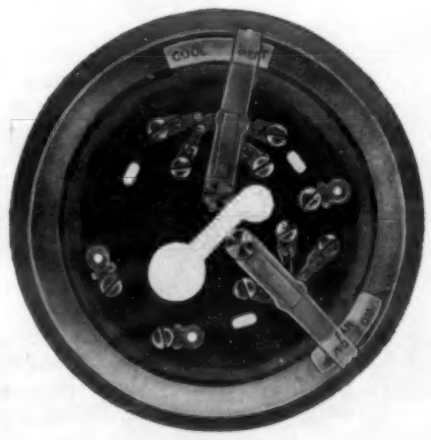
11. COMPARATIVE PRICES: Prices with which actual selling prices are compared in advertising should be those which prevailed in advertiser's own store, or which prevailed in competitor's stores at or just prior to time advertising appears, unless another date is specified in the advertising.

12. SUPERLATIVES AND UNDERSELLING CLAIMS: Unsupported superlatives and underselling claims shall not be used, since it is impossible for any advertiser to have full and accurate knowledge of all prices and conditions in all other stores at all times.

Round for residential cooling, too!

New T87 Thermostat and Sub-Base combinations bring new quality, new flexibility to residential cooling

These new Honeywell Sub-Bases—featuring 8 different switch combinations—offer you a range of flexibility never before available in the air conditioning field. Allow you to give your customer the exact switch and thermostat combination he wants. Sub-Base serves as mounting plate—thermostat simply screws on. Eliminates all wiring to thermostat. Increases ease of installation. Pre-wired factory built control panels are available to accommodate all thermostat and sub-base combinations.



New Honeywell Sub-Bases offer wide range of switching actions

For use with T-87A

- **Q405A—Heat-Off-Cool Fan On-Auto**
- **Q405B—Heat-Cool Fan On-Auto**
- **Q405C—Heat-Off-Cool (extra pole can be wired for continuous fan operation on cooling)**
- **Q405D—Heat-Cool (extra pole can be wired for continuous fan operation on cooling)**

For use with T-87C

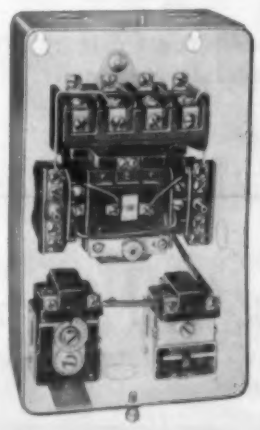
- **Q405E—Cool-Auto-Off Fan On-Auto**
- **Q405F—Heat-Off-Cool Fan On-Auto**
- **Q405G—Heat-Off-Cool (extra pole can be wired for continuous fan operation on cooling)**
- **Q405H—Cool-Auto-Off (extra pole can be wired for continuous fan operation on cooling)**

For more complete information about the new Honeywell Round cooling thermostats, or any of the complete line of Honeywell Controls, call your local Honeywell office. Or write to Honeywell, Dept. AN-5-89, Minneapolis 8, Minnesota.

MINNEAPOLIS **Honeywell**

Air Conditioning Controls

112 offices across the nation



Can be supplied in waterproof or explosion-proof cast-iron enclosures.

COMBINATION PANELS
for High-Low Pressure Control

This Allen-Bradley pressure control panel has a high pressure cutout and a low pressure cutout mounted in the same enclosure with an Allen-Bradley Bulletin 709 across-the-line solenoid starter for induction motors up to 5 hp, 220 v; 7½ hp, 440-550 v.

The white cabinet interior makes installation and inspection easy in dark corners. These controls are good for long, trouble free service.

Allen-Bradley Co.
1313 S. First St., Milwaukee 4, Wis.
In Canada
Allen-Bradley Canada Ltd., Galt, Ont.

ALLEN-BRADLEY
QUALITY
SOLENOID MOTOR CONTROL

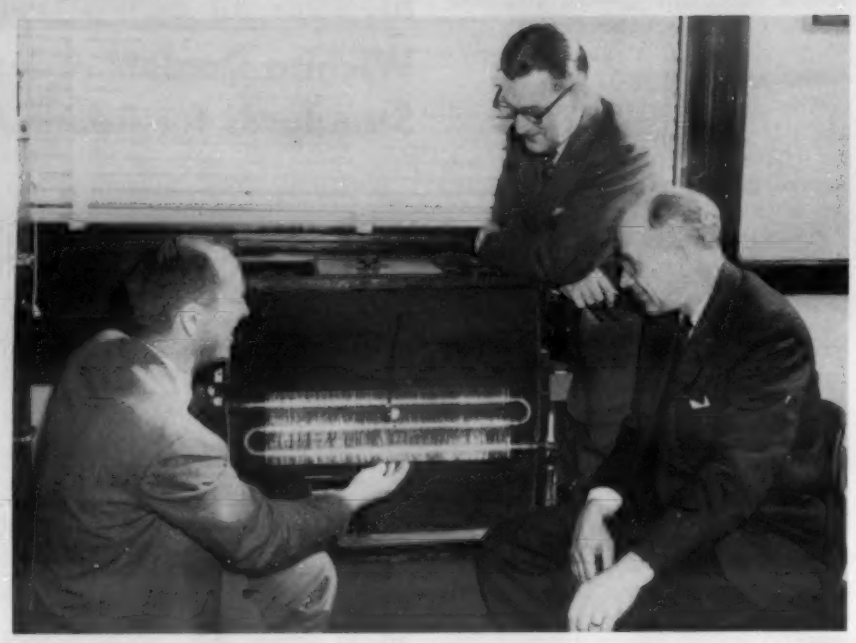
Claim It Is the 'Easy Way'

Room Air Conditioners with Heating Coils Provide Year-Round Comfort In Modernized Office Bldg.

PITTSBURGH—A major Pittsburgh office building has installed and tested a new heating and air conditicning system, using room air conditioner units, that the building management believes meets modernization problems better than complementing an existing steam heating system with a central air conditioning system.

A report on the new combination system, the largest installation of its kind, was made by R. J. J. Tennant, chief engineer of the Henry W. Oliver building, and Jack Cherry, air conditioning sales manager of Philco Corp.

The new system uses a steam heating coil mounted in Philco's ¾-hp. and 1-hp. consolette room air conditioners and more than 600 of the units will have been installed in the building by late this summer.



INSTALLATION of a heating coil in a Philco consolette room air conditioner is being pointed out, above, by William Wood, Philco Corp. air conditioning engineer, to R. J. J. Tennant, chief engineer of the Henry W. Oliver building, seated, and to Joseph Mihm, of the J. E. Miller Co., Pittsburgh distributor for Philco. The front cover of the plenum chamber has been removed to show the installed position of the heating coil and thermostat. The thermostat controls the fan operation when the unit is used for heating. The combination air conditioning and heating system, the largest installation of its kind, was a cooperative engineering program by Philco and the building management.

COST SET AT ABOUT 50% LESS THAN CENTRAL SYSTEM

Tennant reported that costs of the new system were approximately 50% less than the lowest preliminary bid on various types of central air conditioning systems for the 25-story building, strategically located on Mellon Square in the heart of Pittsburgh's business and financial center.

The entire project was a cooperative engineering program undertaken by the Henry W. Oliver building management and Philco in which Tennant and Philco air conditioning engineers pooled their experience. The results, Tennant reports, gave the Oliver building not only satisfactory air conditioning for individual offices but should result in more efficient operation of its heating system.

HEATING GREATLY IMPROVED

"The great improvement in heating of offices was a major reason for many tenants accepting the new system," the building engineer said. "They considered the air conditioning as a special bonus."

The increase in heating efficiency is shown by the use of only one consolette air conditioner with a heating coil in corner offices where formerly two cast iron radiators were needed. The result, Tennant said, was better heat distribution since the air conditioner fan was used to circulate the heat.

More than 400 combination room air conditioners with steam coils were originally installed in 1954 and have been operating through some of the hottest and coldest weather Pittsburgh has known for many years. In all cases, the air conditioning kept offices cool with filtered and dehumidified air, and as a heater kept the rooms at a comfortable heat level at all times, Tennant stated.

TENANT RELATIONS PROBLEMS SOLVED

A major tenant relations problem, too, was solved by the individual room air conditioners, it was pointed out. Management of the building, when considering air conditioning, was reluctant to ask tenants to take the new air conditioning if they did not want it. Management, too, was concerned with the tremendous amount of work involved in building a central system and the noise and inconvenience to tenants.

But with individual room air conditioners the problem was solved. The basic wiring job to handle the room air conditioner power load was put in without any major disturbance to offices.

A copper heating coil, with a radiation surface equivalent in heat output to the largest cast iron radiator used in any room, was located in the plenum chamber of the Philco room air conditioner consolette. The air conditioner fan is operated by a two-speed motor, full speed for air conditioning and half-speed for heating.

A bi-metallic thermostat connected in series with the fan circuit controls the fan operation. The fan comes on at half-speed when the temperature in the plenum chamber reaches 110° F. and shuts off when the temperature drops to 95° F.

Plan Office Building Cooling

CLAYTON, Mo.—A $400,000 air conditioned office building providing 18,000 sq. ft. of rentable space will be built soon at 154 North Meramec Ave. by Lomar, Inc.

ANOTHER INSTANCE OF

CONTINENTAL LEADERSHIP:

NEW...BETTER...

DYCON®

SUCCESSOR TO THE THROWAWAY FILTER!

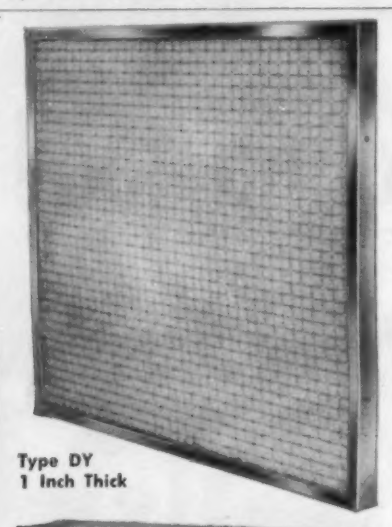
for AIR CONDITIONERS and AIR HANDLING UNITS

DYCON HELPS YOU 2 WAYS:

1. *More profit for you.* Higher list price—with *full* mark-up—assures you larger dollar volume and better margin.
2. *Better-satisfied customers.* DYCON improves performance of unit by eliminating blocked-filter problems.

HERE'S WHY:

Efficient new plastic dry-type media traps dirt by accumulated static charge . . . quickly and easily rinsed clean with cold running water—and immediately ready to be re-used good as new. Sturdy aluminum frame. All standard sizes. As simple as that:



Type DY
1 Inch Thick

CA-20
4 Inches Deep

CA-24
8 Inches Deep

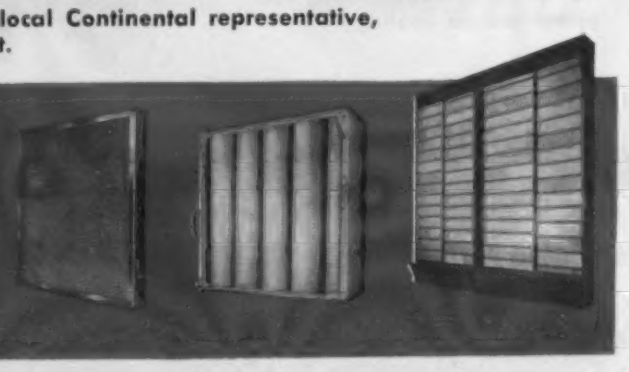
Just RINSE and REUSE

Contact your local Continental representative, or write direct.

AIR CONTINENTAL FILTERS

P. O. BOX 1647 LOUISVILLE 1, KY.

CONTINENTAL AIR FILTERS Inc.



Mitchell Names Scire As Chief Engineer of Air Conditioning Div.

CHICAGO—Appointment Frank J. Scire as chief engineer of the air conditioning division of The Mitchell Mfg. Co. has been announced by B. A. Mitchell, president.

F. J. Scire

Scire will supervise engineering for room air conditioners, central systems, and dehumidifiers.

He has been with the Mitchell company since 1953. Prior to that, from 1950 to 1953, he worked on refrigeration and air conditioning in the casualty and automotive department of Underwriters Laboratories, Chicago.

Scire, 30, is a graduate of the University of Illinois and holds a bachelor of science degree in mechanical engineering.

He is a member of the American Society of Refrigerating Engineers and the American Society of Heating & Air-Conditioning Engineers

Remington Stockholders Can Purchase Room Units At 35%-40% Discount

AUBURN, N. Y.—Stockholders of Remington Corp. may now purchase 1955 model room air conditioners manufactured by the firm at trade discounts, according to Herbert L. Laube, president. The option is good until July 1, 1955.

Stockholder discounts, which vary by models, range from 35 to 40% from standard retail prices and apply only to units purchased by the shareholder for his personal or family use, in home or office, it was stated. Units offered include not only conventional console and window types but also the new Remington "Consolaire."

Although the plan was first introduced in 1953, said Laube, it has been greatly liberalized for 1955 because of the large increase since then in number of shareholders, particularly those with small holdings.

Each shareholder may purchase direct from the factory three times as many dollars worth of Remington units as are represented by the par value of his shares, it was explained. For example, a shareholder owning $250 of par value Remington stock would be authorized to buy up to $750 of air conditioners at a discount of 35 to 40%, or a retail value of about $1,200.

"That is enough," Laube pointed out, "to cover any heavy-duty console or any two window models or Consolaires in the Remington line."

So that even the smallest stockholder can try out the company's products, on conditions as favorable as those applying to the larger stockholders, it was announced that any stockholder regardless of holdings would be allowed to buy a minimum of one ½-hp. window model at this special discount, it was explained.

Local dealers will participate in the plan by assisting shareholders in selecting the correct unit for their particular needs, by making the installation, and by rendering service. The dealer receives an allowance of $15 per unit direct from Remington for this service, in addition to the normal installation charge to be paid by the shareholder.

MARSH Instruments

THE SERVICEMAN LINE of Testing Gauges, Testing Thermometers, Timers, etc.

PRESSURE GAUGES and Dial Thermometers for all services.

MARSH-ELECTRIMATIC, Water Regulating Valves, Solenoid Valves.

MARSH INSTRUMENT COMPANY
Sales Affiliate of Jos. P. Marsh Corporation
Dept. D., Skokie, Ill.

Backed by BBB

Industry-Wide Campaign Begun To Curb 'Bait' Advertising; Advisory Board Named

PHILADELPHIA—A campaign to curb "bait" and misleading advertising of major appliances and radio and television sets is shaping up here.

The industry-wide drive is planned by a newly-formed Advisory Committee to the local Better Business Bureau. A $25,000 "war chest" will be used in the campaign, according to Jack Rosen, vice president of Raymond Rosen & Co., local distributor, who is chairman of the committee.

A series of meetings has been held with manufacturers, wholesalers, retailers, department store executives, and the district attorney's office. Since then, a five-point program has been drawn up.

Full-Time Investigator

One of the committee's objectives is to provide funds for a special full-time Better Business Bureau investigator to work for the group. The committee also planned to ask newspapers and radio and TV stations to cooperate by accepting only advertising that complies with an advertising code drafted by the group.

In addition, the committee will seek the support of dealers in the area, and inform the public of the group's aims by means of advertising. Strengthening a bait advertising measure prepared for introduction in the state legislature is another objective.

May Form Dealer Committee

Rosen said the campaign has been approved by the larger manufacturers and distributors in the area, the local department stores, and a dozen of the leading appliance dealers in the area. The latter have been invited to form a dealer committee to serve as part of the over-all committee.

The district attorney's office has promised to cooperate fully, according to Rosen.

It was reported that contributions to the war chest will include $17,000 from distributors, about $3,00 from utilities, and $4,000 from dealers.

Rosen explained that if an ad is found to be misleading after investigation by the BBB, the dealer concerned will be asked to discontinue such advertising. If the dealer ignores the warning, the committee will ask the advertising media for cooperation. If this effort fails, the district attorney's office will be asked to take action.

Could Eliminate 75% of Offenses

The committee feels the campaign "will eliminate about 75% of the flagrant abuses in the major appliance-TV field here," Rosen said.

In addition to Rosen, officials of the committee include Vern Gaggin, BBB director; John Hawkins, general manager, Philco Distributors; Thomas F. Joyce, president of Raymond Rosen; Theodore Kapnek, president, Delaware Valley Distributors; Arthur C. Kaufmann, executive head of Gimbel Bros.; and Al Paul Lefton, head of the advertising agency bearing his name.

Others are Harry Levin, home furnishings store owner; Austin Monty, residential sales manager, Philadelphia Electric Co.; W. G. Peirce, president, Peirce-Phelps, distributor; John A. Morrison, managing director, Electrical Association of Philadelphia; Frank Tremble, vice president and director of sales, Philadelphia Gas Works; and Ray Green, president, Philadelphia Association of Broadcasters.

Shana Names Southern Firm

ATLANTA—Shana Mfg., Inc. of Chicago has announced the appointment of Leon Bennett Associates, Atlanta, as sales representative in Georgia, Florida, Alabama, and Tennessee for Shana-Air air conditioning and heating equipment.

Utility Appliance Corp. Acquires Plant In Mexico

LOS ANGELES—Utility Appliance Corp. has acquired a plant in Mexico for assembling its evaporative coolers, refrigeration units, and combination heating and air conditioning units.

Located in Torreon, Coahuila, the Mexican division has been incorporated in that country as Utility S.A. de C.V. In charge of the operation is J. N. Vandemoer, president and general manager of the new corporation.

Vandemoer is the former distributor in charge of sales and installation for Utility in that section of Mexico. Other Mexican principals in the corporation are Salvador H. Villarreal, Jose Necochea, and Jose Vazquez.

Stockholders in Utility S.A. de C.V. are American and Mexican nationals, with Utility Appliance Corp. also being one of the stockholders. Approximately 50 employes are presently working in the plant formerly used as Vandemoer's distribution headquarters. Plans are currently being formulated to acquire another building which will give the company additional necessary working space.

ARI Appoints A. Migliaro Public Information Director

WASHINGTON, D. C.—A. Migliaro has been appointed public information director of the Air-Conditioning & Refrigeration Institute here, it was announced recently by George S. Jones, Jr., managing director.

The appointment is part of the institute's expanded public relations program, Jones said.

Migliaro, who was on the editorial staff of the Washington *Times-Herald* at the time of its merger with the Washington *Post*, came here five years ago from New York City where he worked for the Fairchild Publications.

Air Cooled Cabs Take Simmer Out of Summer

ST. LOUIS — Laclede Cab Co. plans to air condition more than 40% of its 168 cabs by July, according to A. J. Cervantes, president.

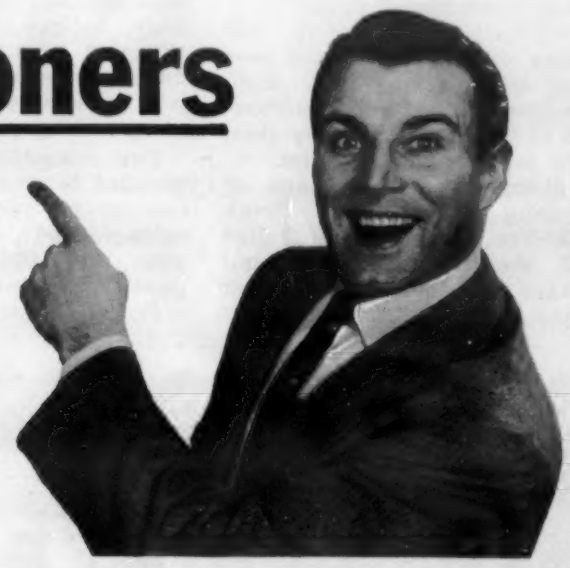
"Don't get us wrong," Cervantes remarked. "We agree with the Chamber of Commerce that St. Louis is a good place to live, even in summertime. But air conditioning makes it a better place to live."

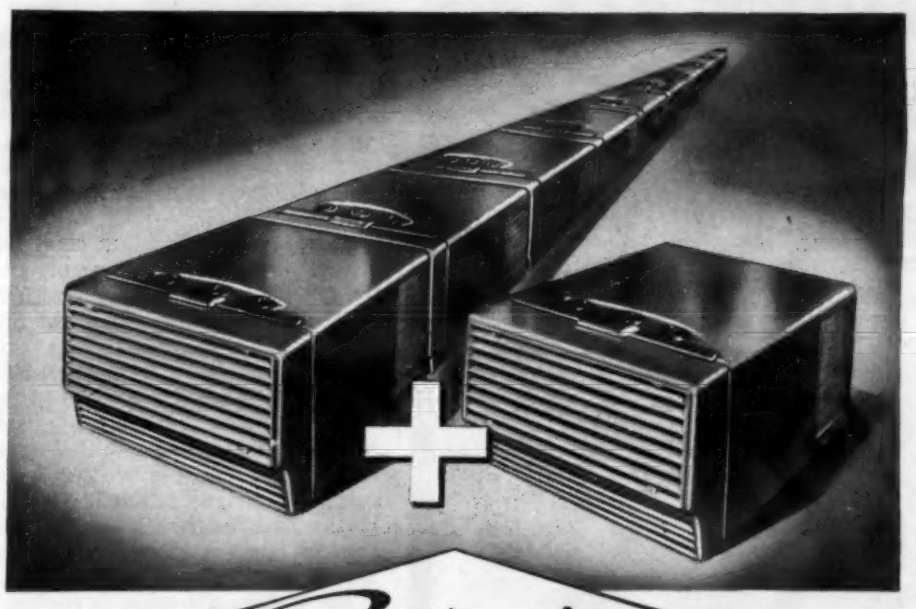
He observed that with air conditioned cabs available, people will be able to "travel back and forth between air conditioned homes and offices and to the air conditioned opera without ever working up a sweat.

"That's much better than consoling themselves with Wahlgren's daily summertime pronouncements that it may be 104° in St. Louis, but it's 30° hotter in Death Valley."

ONE MAN can walk
an Air Conditioner
UPSTAIRS ALONE
and put it in the
window without help
with the new L-S
STAIRWALKING DOLLY
write
L-S HTG. & ENGRG. CO.
Philadelphia 40, Pa.
Territories Available

Get Free Air Conditioners with REMINGTON'S BIG 5 FOR '55!





Remington AIR CONDITIONING

Division of Remington Corporation, Auburn, N. Y.
Founded 1872

YOU PROFIT from this Remington Plan at the Start of the Season!

Think of it! Right off the bat — with your order for *only 9 Remington units — your margin of profit leaps to a new high! You can sell the free Remington you get — and pocket more of that "green stuff."* Or you can set up consumer promotions that build traffic, build good will, build *profits*. It's easy to give away air conditioners as consumer prizes when you get 'em FREE!

YOU Handle the Most Complete Line of Room Coolers made today!

A type and size for every purse — console and window units! Models from ½ to 1½ HP . . . air or water cooled . . . in a wide variety of electrical characteristics for AC or DC.

YOU'RE Ready to Fill Orders at the First Sign of Hot Weather!

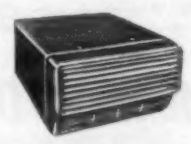
Here's a plan that enables you to carry a comfortable inventory so you can take full advantage of increased demand at the first sign of hot weather. You don't have to stock 15 or 20 or more units to get the benefit of a free model. With Remington you get 1 for 9 — for quick and easy profits!

Tie In With REMINGTON'S BIG 5 FOR '55!

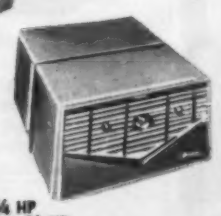
- Demonstrator Allowance Plan!
- Controlled Inventory Plan!
- 1 for 9 Plan!
- Weather-Viser Forecast Plan!
- Coloramic Sales-Center!

Take full advantage of Remington's complete line—

Window models, Consolaires and consoles from ½ to 1½HP. The most saleable line for 1955 — Tropic-Tested, proved in over 62 countries since 1937.


Model S6 ½ HP
Model S7 ¾ HP

Model 6 ½ HP
Model D6C Deluxe ½ HP


Model 8 ¾ HP
Model D8 Deluxe ¾ HP
Model 11 1 HP

Model 12 1½ HP

Consolaire
¾ HP and 1 HP

Get the "sizzle" from your Distributor! ...Or write REMINGTON

Remington Corporation, Air Conditioning Division
11-5 Willey Street, Auburn, N. Y.

Rush the facts on Remington's Big 5 for '55, plus particulars on the new Consolaire!

Name_____

Company_____

Address_____

City_____ Zone____ State_____

FREEZING DUCKLINGS

New Processing Plant Let's Raiser Market Oven-Ready Birds

THREE of four Kramer TV350 Thermobank blower coils which maintain -20° F. in 30 ft. by 10 ft. by 10 ft. room. Ducklings can be piled 7 ft. high without interfering with air circulation.

SOMERS POINT, N. J.—Installation of a completely new processing plant for freezing of ducklings has enabled D. De Feo & Son, New Jersey's largest duck raiser, to market "oven ready" ducks.

Previous to the use of the new freezing plant, the firm has been killing and plucking their ducklings, placing them under refrigeration at 34°, and delivering them to the market, packed in ice.

Contemplating the change of processing for some time, Frank A. De Feo, firm president, called in H. Morrison Spencer, general manager and application engineer for the Seaboard Appliance & Refrigeration Co. of Atlantic City, for a survey of his problem.

Spencer recommended a Kramer Trenton Co. "Thermobank" automatic hot-gas defrost system to eliminate frost problems and remote-type air-cooled Kramer "Unicon" condensers to eliminate water and plumbing problems.

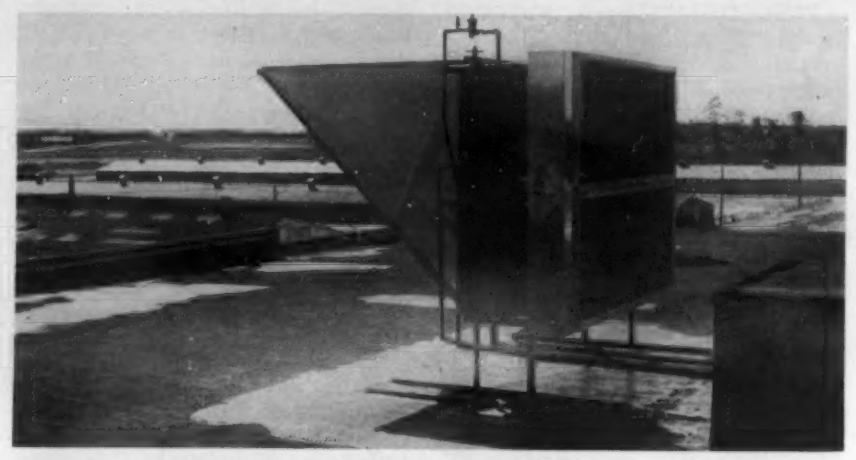
Two independent systems were installed to provide 50% of total capacity for storage service. The balance of 50% is put into service when the 5,000-lb. freezing load must be handled.

During holidays and weekends, only half of the system is in operation to provide required refrigeration. In an emergency, freezing loads of 9,000 lbs. have been handled satisfactorily.

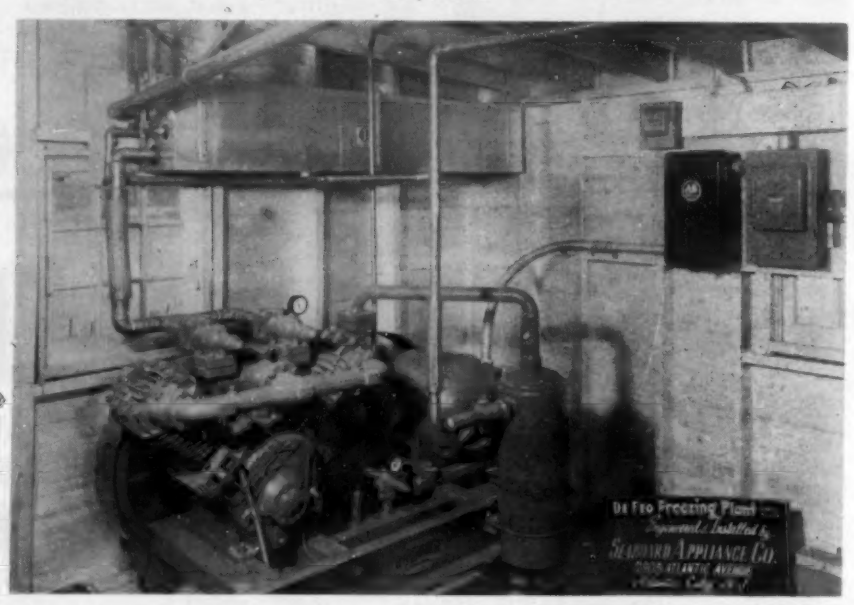
According to De Feo, the new processing method has made possible a better market price and at the same time increased the product's sales appeal.

Delivery scheduling has been simplified by the new system, since the ducklings can be held in storage until the market is ready for them. Operating costs have been reduced.

Commercial Refrigeration



KRAMER model BD2000 Unicon with Winterstats and wind deflector connected to two 20-hp. compressors.



ONE of two Brunner 20-hp. compressors and Kramer B40H Thermobanks. The Thermobank is mounted on the wall above the compressor.

De Feo stated, "The hot-gas defrost with Thermobank and the use of the Kramer Unicon for condensing purposes eliminates the use of water entirely. This gives us an operating cost for utilities of $.0019 per pound of duckling processed."

Seaboard's application engineer directed the installation of two combination No. 13 Kramer Thermobanks, including four TV 350 diffusers and two B 40 banks in the 30-ft. by 10-ft. by 10-ft. room.

Each combination No. 13 was connected to one 20-hp. Brunner compressor complete with oil separators. The two compressors were connected to one BD-2000 Kramer Unicon, divided so that half of the Unicon handles the condensing of the "Freon" for each compressor.

Each Unicon section is equipped with the Kramer "Winterstat" to provide adequate head pressure for system operation in the winter months. The Unicon is located on the roof of the building and is equipped with a wind deflector.

The TV 350 diffusers are staggered on either side of the 9-in. cork-insulated refrigerator to provide complete air circulation. Ducklings can be piled 7 ft. high without interfering with circulation.

The total volume of air moved is 16,000 c.f.m. This rapid circulation gives rapid heat transfer and quick freezing of products.

The TV 350's operate at -28° refrigerant temperature and 8° T.D. between air temperature and refrigerant temperature. Minimum dehydration is assured by the low T.D. and the "Cryovac" packages.

The box temperature is maintained at -20° F. by two thermostats with one set at -18° and the other at -20°. One compressor handles the load between -18° and -20°.

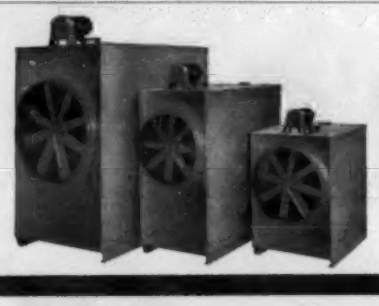
As the load increases and the temperature goes above -18°, the second compressor starts automatically and boosts the capacity of the system to handle the heavier load. The compressors are operated from low-pressure controls and the thermostats control liquid line solenoid valves.

If temperatures reach 0°, an alarm system sounds a bell. The same bell is connected to a button inside of the cooler which can be used by anyone trapped inside. This entire alarm system is battery operated making it reliable even in the event of power interruption.

A changeover switch has been provided to permit even wear of the compressors. The operator throws a switch every four months and the compressor carrying the lower temperature load is switched to the higher temperature operation. Since this program results in three changes per year, neither compressor is called upon to carry the summer operation for two consecutive summers.

HALSTEAD & MITCHELL

COOLING TOWERS



2 thru 120 TONS

Protected Steel

adds new years of life!

Steel in cooling towers undergoes constant corrosive attack by both water and water-treatment chemicals. Halstead & Mitchell combats this rusting . . . adds years to cooling tower life . . . by Protected Steel, a new concept in steel protection. Protected Steel is not simply a treatment, but a whole new approach to the problem of steel subjected to constant exposure to water. Halstead & Mitchell provides this added value in cooling tower construction . . . to give you added protection.

TRIPLE-THREAT PROTECTION

Not one, but three individual finishes coat every Halstead & Mitchell sheet steel cabinet. Vinsynite phosphates the metal, providing *maximum* protection against corrosion. Vinyl Zinc adheres tightly to the Vinsynite . . . is tough, flexible, inert . . . and provides high resistance to moisture vapor. Chlorinated rubber . . . tough and water resistant . . . provides film thickness, of vital importance in combating water immersion and high humidity. Applied *hydraulically* to force these protections into every conceivable opening, they provide the most satisfactory cooling tower steel protection ever developed.

STAINLESS STEEL FANS, SHAFTS

Halstead & Mitchell cooling tower fans and shafts are Stainless Steel. Rust-proof, of course.

EVERDUR BOLTS

For ease of disassembly after years of operation, H & M uses Everdur Bolts in all cooling towers.

Want More Details? Then Write for Catalogs or Visit Your Nearest Leading Wholesaler

EXCLUSIVE 20-Year Guarantee!

on the wetted deck surface against rotting or fungus attack

Only Halstead & Mitchell pressure-creosotes all wood used in its cooling towers, to provide the most satisfactory protection known against rotting, fungus attack, and corrosives in cooling water. That's why you get the "20-Year Guarantee" only from H & M.

HM Halstead & Mitchell

BESSEMER BUILDING • PITTSBURGH 22, PA.

Here's Advanced Design in 1. Appearance 2. Utility

LIQUID EYE®

Indicators

2,000 SERIES

(Illustrated)

All types of refrigeration applications use some kind of "sight glass". **Precision-Built Allin LIQUID EYES**—used by leading manufacturers and contractors—incorporate advanced design and improvements which keep refrigerant losses to an absolute minimum.

Engineers, dealing with fluid flow problems, associate the name **"LIQUID EYE"** with high product quality and valuable engineering assistance.

You'll find a LIQUID EYE designed to perfectly fit your application, too. An Allin representative is ready to help you choose from a complete line.

Send for Allin Catalog D-55

Allin MANUFACTURING COMPANY 1153 W. Grand Ave., Chicago 22, Ill.

INSIDE DOPE

Learn to live and laugh—
Thus delay your epitaph

By GEORGE F. TAUBENECK

(Concluded from Page 1, Col. 1)

the thoughts of others. Words, single words, are powerful.—*New Outlook.*

Mankind are greater gainers by suffering each other to live as seems good to themselves than by compelling each to live as seems good to the rest.—JOHN STUART MILL.

"As long as a country gets dividends from neutralism, that country will continue to play one suitor against another. It's like girls—they all like to cash in on suitors. But when a young fellow comes along and says, 'Look here, girl, make up your mind,' why she jolly well does."—MOHAMMED ALI, Prime Minister of Pakistan.

The second half of the 20th century can be either the most glorious or the most disastrous segment of time in the entire life of America, to say nothing of the world.—PAUL HOFFMAN.

All the News That Fits the Print

Challenged as a juror, linotype operator Leo Love of Jackson, Miss., responded:

"Of course, I ain't prejudiced by newspaper reporters. I've set their stuff so long I don't pay any attention to it."

(Private note to Johhny Belleman: Uh huh.)

NEW PRODUCTS?

Turn to "What's New" Page for useful information on new products. Use Key No. for fastest service.

And this item gives us a chance to introduce our latest collector of typographical errors and unintentional humor snipped from the nation's press. Subscriber S. C. Dietch of Bridgeport, Pa., sends us the following gem:

WANTED: Man to work in icebox, loading out trucks. 1 A.M. 'til 9 A.M. Live in. Please give references. Box B-113 *Times Herald.*

More Newspaper Boners

Those which follow were spotted by Dope's anonymous helpers.

Slaying of Girl in Galion Home is Considered.—*Toledo Times.*

Hits Woman in Back Bay.—*Boston Traveler.*

Councilman Reluctant to Have Heads Examined.—*Waco News-Tribune.*

After the ceremony, Mr. and Mrs. Griffith went directly to Chicago, where Mr. Griffith had everything in readiness for his bride.—*Marshall Herald.*

The second call was at 9:23 p.m. to 1909 Main where Cathleen overheated.—*Tri-City Herald.*

There is no scientific basis for reported fears that the burned fisherman will be rendered sexually important.—*Hammond Times.*

Rabbit is a lot like children in appearance and taste.—*Indianapolis Star.*

The Pontiff, who resigned from 1846 to 1878. . . .—*Detroit News.*

'Number Please' Girl Quits After 42-Year Stink.—*Miami Herald.*

Army to close an officer here.—*New York Times.*

Dr. Stout To Address Over-weight Women.—*Albuquerque Tribune.*

Charged with Driving Her Cad Through Stop Sigh.—*Stroudsburg Daily Record.*

Infant's Arrival Impels Parents To Seek New Recreation Ideas.—*Appleton Post-Crescent.*

Policeman Accidentally Shot in South End.—*Boston Herald.*

He had repeatedly cooperated with the police in their fight against law and order.—*Toledo Blade.*

FOUND, young female, reddish brown, long hair. Owner pay for ad.—*Los Angeles Times.*

A Man Is Known By . . .

Following a civic banquet Edward (Cardinal) Mooney and Charlie Haun, photo editor of the *Detroit Free Press,* were handed their hats simultaneously by a checkroom girl.

With surprising pride the Catholic personnage displayed a hatband. His full name and titles were gold-encrusted thereupon.

"That's good," Charlie responded, noting that the Cardinal's hat was identical with a million other priest's headpieces.

"In this crowd you run around with, that signature should be useful."

Staff Memo

GFT: You'll be interested to know, we're sure, that in Shelbyville, Ill., there's a company known as Sta-Rite Ginnie Lou, Inc., and that Branchland, W. Va. is the headquarters of a concern called the Big Huff Gas Co.

JOS & GMH

Customers Always Write

Refrigeration Sales Co.
71 Sandwich St., E.
Windsor, Ont., Can.

In long gone days tis when this happens
Ere homo changed from sap to sapiens
A hairy tribe lived in a cave
To shelter from each wandering knave
The cave's crude plumbing was indoors
Presumably they used the floors.
Only the staunchest could survive
A wonder that we're here alive
The tribe's head man was gouge'em Peter
A brawny lad and quite an eater
His favorite dish was stuffed gorilla
Washed down with spik-ed sasparilla
E'en in those days life had its flaws
Incessant fighting, stupid wars
You never knew what next was cooking
Amany a gink went cock-eyed looking.
One day old Pete sat in his study
Poking his ears, they were quite muddy
Around him were his bunch of femmes
Squatting on expanding hams
And chasing fleas down hairy gams
Only one stood, his favorite Ulgar
She wouldn't squat, she thought it vulgar
Her scanty raiment unconceiling
Would start the hairy stag line squealing.
Unto him came at a sharp canter
Crazy Hank, the tribe's inventor
Carrying two sticks, one with a thong
Saying, "Pete I can't be wrong
This thing I've got, stops war forever
They can't resist, no never, never"
He took an arrow from his quiver
And nicked old Peter near the liver
Alack, alas, his joy soon faded
His face with pain was soon invaded
An arrow sped from out a corner
And poor old Hank was soon a goner
And who d'ou think this deed committed?
'Twas Ivan Bearski, though slow witted
He'd spied on Hank our poor inventor
And plans for peace were knocked off center.
Now there he stood as large as Magog
A scowl on his cruel slavic physog
Said Pete, "This sure means repercusions
Well anyway, "There blast the Russians!"

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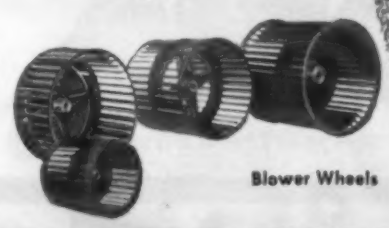
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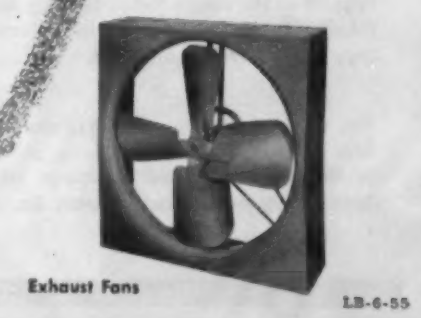
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A News Editor's Report of the A-Bomb Test, And Its Significance to Industry and Public

(Editorial Director Phil B. Redeker of the News was an official observer at the "Operation Cue" Atomic Open Shot test at the Nevada test site. In the May 9 issue he wrote his impressions of events leading up to Shot Day. On these pages he describes the A-Bomb blast, and the subsequent survey of the damaged area, as he saw it.)

By Phil B. Redeker

LAS VEGAS, Nev.—The most evilly beautiful sight I've ever witnessed.

That is how this observer would describe the explosion of the nuclear device that was set off at 5:10 a.m. May 5 in Operation Cue at the Nevada Test Site of the Atomic Energy Commission.

Everything Seemed Right

After many disappointing predawn vigils, there was still a great feeling that a.m. that "this was it." For one thing the air seemed just perfect. It was a cloudless night, and the moon bathed Yucca Flats and the surrounding mountains in a still light.

There was still some good-natured grousing, and the jokers who had changed the "Media Hill, Nev., Pop. 1800" sign to "Pop. 18" by erasing the two zeros, had done some further work by changing the inscription "Atomic Test Site" to read "Weather Test Site."

However, at H-hour less 1-hour the high explosive shot was fired, to test the direction of the wind, which meant that the "shot was still on." Then came the announcement at 30 minutes before H-hour, and the beginning of briefing instructions for the safety of observers. It looked good.

2 Methods of Viewing Shot

There are two methods of seeing the shot in safety. To look in the direction of the blast, even with one's eyes closed, is to take a chance on permanent injury to the eyes. (In fact, the only injuries that have occurred in the test series have been eye injuries). So you protect yourself in one of two ways:

1. By the use of special high-density, tight-fitting goggles. When you put these goggles on and look at the sun, it appears like a mere pinpoint of light. But even those using the goggles said that the explosion of the nuclear device made one tremendous glare of light, many hundreds times brighter than the sun.

Procedure in using the goggles is to watch the initial blast with them on, then removing them after counting "one thousand, two thousand, three thousand" slowly. Disadvantage of using the goggles is that they tend to dilate the pupils of the eyes and distort normal vision after being removed.

2. The other approved method is to turn one's back to the explosion, and then turn around slowly, but slightly faster than the timing for removing the goggles, after the blast.

After listening to the discussion of the methods by those who had tried both, I decided to do the back to and turn-around trick, as it seemed like I would get a more normal view of the blast that way.

Shortly before 15 minutes before H-Hour came the announcement "The final weather tests have proved positive, we're in, the shot will be fired." There was a pause, then a mounting cheer, just as the speaker from the control point communications system gave us the 15 minutes from H-Hour warning. Then came a further warning to brace ourselves for the shock wave.

'Count-Down' Came

Then the "count-down" came, first by five-minute intervals, then minute intervals in the last five minutes, then at 30 seconds, then by seconds in the last 15 seconds—

As it got down to "five, four, three, two" you hoped, in that last split second, that the right-sized device was up in that tower, and you had one of the great moments of expectancy in your life.

Light of Flash Is Indescribable

The light of the flash is indescribable. It simply bathes everything around you an orange-hued light that you've never before experienced. It seemed to me like I had been jerked out of near-complete darkness and thrown into the light of myriads of blast furnaces. Without the heat, of course, for there is no heat or noise, at 7 miles.

Then the turn around to see the fireball, seemingly bubbling up out of the purplish-gray dust cloud near the ground. It is probably the most awesome sight one actually sees in the whole explosion. It would seem to be miles in circumference, and is a complete color complex — oranges, reds, blues, purples.

There is a special violet-colored glow about the edges which is said to be brought about when the gamma radiation causes ionization of the nitrogen and oxygen of the air. During a complex series of atomic events, the excited nitrogen and oxygen molecules return to their normal state by emitting energy in the form of visible radiation. The radiation falls to a large extent in the violet region of the spectrum, causing this particular glow, which one English newspaperman termed "the heliotrope effect."

The actual "fire effect" as we view it is partially from the fissioning effect, and partially from the heating of the surrounding air to the point of incandescence. About one ten-thousandth of a second after the explosion the temperature of the fireball is about 300,000° C., and at a distance of 6 miles the luminosity would be well over 100 times that of the sun, as seen from the earth.

Life of Fireball Short But Beautiful, Terrifying

Life of the fireball is quite short, but it is a beautiful and terrifying sight while it lasts. It dissolves to form the stem of the familiar "mushroom" cloud. In the meantime, we are subjected to another effect of the explosion—the shock wave. And it is a surprise.

At our distance of about 7 miles from Ground Zero the shock wave hits at about 30 to 35 seconds after the moment of explosion. We were told to brace ourselves for it but it was still a surprise—from my own standpoint, because three things hit me all at once.

The shock wave itself, which felt like some invisible, rushing force whapping you right through the middle; the noise, a surprisingly loud but split-second lasting "bang"; and the searing heat effect, again lasting only a fraction of a second.

Some Observers Bowled To Their Knees

Despite the warnings, a couple of observers who were adjusting cameras or were otherwise not prepared for it were literally bowled to their knees.

The mushroom cloud now began to form from the stem, boiling upward and outward somewhat like the fumes from a beaker of acid in a chemistry laboratory.

A variety of colors at first, mostly a purplish-blue, it eventually took on a tawny shade. For some reason I thought of the two clouds—the base and the mushroom—in terms of the coloring of fox furs. The base was gray fox, the mushroom took on the coloring of the red fox.

The red-tinged coloring of the upper cloud, A.E.C. scientists explained, was partly due to reflections of the sunlight (it was still a beautiful, cloudless day), partly because of the disassociation of oxides, and partly because of the dissolved elements of the steel tower on which the bomb was exploded, and which was now up in the mushroom cloud.

This cloud is very "hot" in the radioactive sense of the word, we were told. It will stay "hot" for quite a while, although time and dissipation through the atmosphere have a general "weakening" effect on its radioactivity.

Composition of Mushroom

The mushroom develops out of the expanding column of smoke that boils up the stem, and it is made up of water droplets, radioactive oxides of the fission products, and some debris. The heavier debris falls to the ground.

Because both the base cloud and the mushroom are of such magnitude, it seems incredible when it is announced the top of the mushroom is now approaching an altitude of 42,000 ft. You look around at some of the high mountain peaks behind you, and find that, yes, it has ranged high above their level. And yet it is so monstrously big.

The "ice cap" forms briefly on top of the mushroom, caused by thousands of small ice crystals formed when gases above the mushroom expand and are cooled. Then the mushroom breaks off from its stem, and floats first south towards Media Hill, but then suddenly turning and taking off in a northeasterly direction as it reaches the altitude where the predicted stratospheric winds pick it up.

Drone Planes Fly Through Mushroom

Drone planes fly through the mushroom before it attains too high an altitude, their instruments picking up valuable scientific data on radioactivity and other effects. You wince as you watch them fly into the burgeoning clouds.

The A.E.C. scientists rather openly gloat over the general success of the shot, and particularly the path taken by the high cloud. They have been somewhat sensitive about the charges made that certain of the postponements had been unnecessary. You somehow get the idea from the tone of their conversation that no one is going to tell the A.E.C. when to detonate a nuclear device, in a peacetime test, other than a council of their own kind.

Jet Flyers Tail Cloud Several Hundred Miles

Jet fighter planes which are sent up as a precautionary measure to "tail" the radioactive high cloud for several hundreds of miles, circle it like pony-mounted cowboys riding herd on a cattle drive.

A surprising item to this ob-

(Concluded on next page)

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A-Blast Observations--

(Concluded from preceding page)

server was the continuously expanding size of the base, or dust cloud along the ground. It appeared to me that it was extending out a distance of eight to 10 miles, and this was borne out by the fact that well over an hour past H-Hour it began to approach our positions on Media Hill, without seeming to diminish much in depth or density. We pulled out in our buses before it came over the Hill, but those who had gone through it in forward trench positions said it was a choking, blinding mess.

This dust cloud is not highly radioactive, at any appreciable distance from the blast, it was said, when the explosion is an air burst. However, a detonation at or near ground level might result in much more radioactivity in such a cloud.

The nature and scope of the base cloud lead this observer to wonder if shelters with proper ventilation and air filtering might not be very important for the protection of those on the fringe area of a blast (see main story for more on this subject).

Specially Clothed Teams Study, Decontaminate

As we left Media Hill that morning, the damage survey and decontamination teams were getting ready to go in to some of the not-too-close areas. They had costumes somewhat like those of divers, with extra wrappings on their boots, and with any crevices in the coverall uniform (such as around the wrist) sealed with a masking-tape-like substance.

Early in the morning, on Shot Day Plus 1, we boarded the buses for the last time to inspect the damage done to Survival City or Doom Town, whichever you prefer to call it.

House Trailers Toppled Over at 10,500 Ft. Line

When we finally got up to the Flats, we first noted a couple of the house trailers toppled over at the 10,500-ft. line, and windows blown out of the houses at this line. Then there were the rows of mannequins braced on the open flats, some still erect, some toppled over, some with arms and legs blasted off.

At the 6,800-ft. mark the utility-type industrial buildings, consisting of aluminum or light gauge steel over various types of framing, showed severe damage. The sheet wall panes were stripped from the structure, and there was much evidence of buckling. The survey damage teams pronounced them virtually unusable and unsalvageable.

When we came to the 4,700-ft. mark, the point of the really severe test for ordinary housing and utility installations, the scene was one of mingled destruction and durability.

The two-story brick and cinder block house was just demolished, and there was no other way to describe it. The above-ground portion of this house was almost completely destroyed, and the first floor was partially collapsed into the basement. None of the brick work remained standing, and the structure as a whole was beyond repair.

The one-story frame rambler located near the two-story brick dwelling was likewise almost completely destroyed, seemingly collapsing inwardly. Only a reinforced concrete bathroom shelter (a couple of these were tested) remained intact.

On the other hand, both the one-story reinforced lightweight cinder block house and the one-story precast lightweight concrete house suffered only minor structural damage. However, doors and windows were blown out, and there was considerable missile damage inside these houses. With little repair, however, they could have been made habitable quickly.

Blast Effect Comes In 3 Phases

The "blast" effect which causes the knocking down and collapsing of structures actually comes in three phases. The actual shock wave front is a wall of highly compressed air, which develops three destructive forces:

1. An "overpressure." This varies by the strength of the original explosion, and distance from the explosion. At 4,700 ft. with the 35-40 kiloton device exploded in Operation Cue, the overpressure at that point was estimated at 5 p.s.i.

2. When the shock front reaches the rear edges of a structure it spills in behind the structure and completely envelops it in the high pressure air mass. Then the blast wind becomes the main factor in tending to push the structure over or collapse it. This force is called the drag loading, and is somewhat comparable to the loading upon an object in the airstream of a wind tunnel.

'Suction' Phase

3. There is also a negative pressure or "suction" phase to the blast, something like that brought about by a tornado. This results in the lowering of the pressure on the outside of the structure below the entrapped normal atmospheric pressure inside the structure. The structure will therefore be stressed outwardly and a comparatively flimsy structure, already weakened by the positive pressure phase, may even explode.

Many observers were surprised that there wasn't more evidence of fire damage at the 4,700-ft. and 5,500-ft. lines. There are two main reasons why there is no evidence of fire:

1. The characteristics of the thermal radiation or "heat flash" effects of the explosion are such that they do not ordinarily ignite sound wood members of a structure.

2. Since there was no rubbish in the area, and no operating gas or electric utilities, or open flames in the houses, there were no "secondary" fires.

About one third of the energy of an atomic explosion may be released in the form of thermal radiation. In a vacuum, intensity of thermal radiation would decrease according to the inverse square law (one-fourth the value at twice the distance, one-ninth the value at three times the distance). Thermal radiation is also further reduced by air absorption.

Effect of thermal radiation from such an explosion is generally expressed in terms of calories per square centimeter. At the 4,700-ft. mark in the Operation Cue blast the thermal radiation was estimated at 30 calories per square centimeter. An effect of 8 or 9 calories will provide a charring result.

However, the igniting effect of thermal radiation depends not only on quantity, but duration. This is demonstrated in everyday life in the use of a blowtorch. If the intense flame of a blowtorch is passed over a sound wooden surface, the wooden surface will not ignite. If the blowtorch is held at one spot on the surface for a sufficient time, it will start to burn.

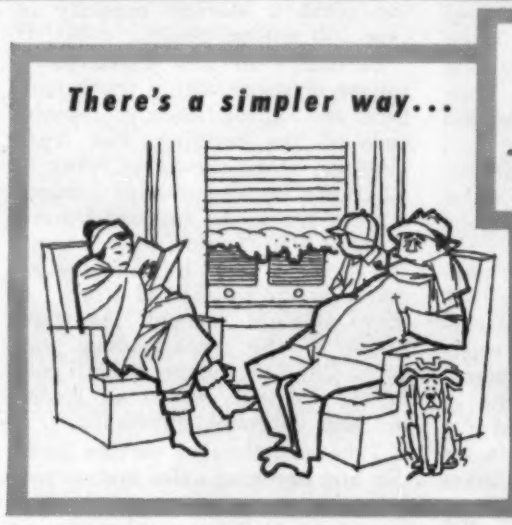
Thus, the thermal radiation will not likely ignite sound wood, but it will ignite rotted or decaying wood, and rubbish.

No attempt will be made here to discuss the effects of nuclear radiation, because the subject is both complex and controversial. The general impression this observer received was that both the A.E.C. and the F.C.D.A. tend to worry much less about the effects of radiation on the populace of an area hit by a nuclear weapon, than they do about blast, thermal, and missile effects.

Civil Defense Measures Seen as Clue to Survival

Seeing the bomb explode, one cannot be impressed with its tremendous destructive power. But in surveying the damage area afterwards, I found considerable comfort in the fact that in areas other than that of a direct hit, the chances for survival, providing proper shelter is taken, are very high. If the American people and American industry take proper civil defense measures, they can minimize the dangers from atomic attack greatly.

And if the "mass feeding" teams of the Civil Defense operations function as well as they did out on the Flats on Shot Day Plus 1, you'll be eating better than you do normally after such an attack. Cooking on open fires and hot coals, using only utility tins and grilles, they served a delicious lunch of roast beef and beef stew, supplemented with "hard" rations of biscuits, chocolate, etc.



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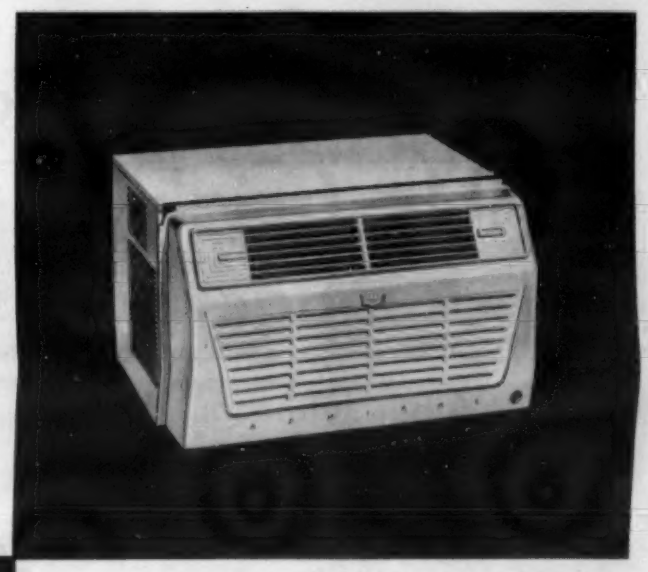

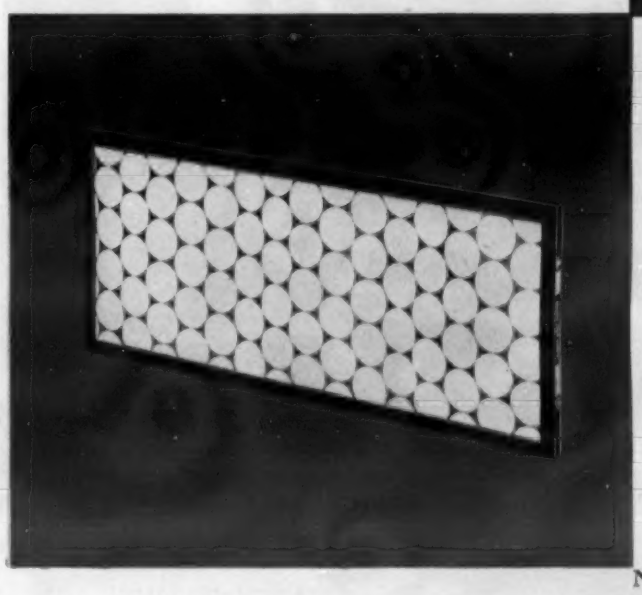

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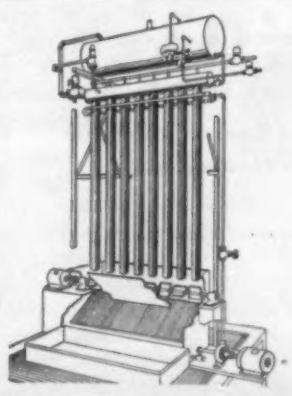
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Good Layout, Mechanization, Efficient Doors Seen Key to Success of Frozen Food Warehouse

By A. W. Ruff, Vice President and Secretary, V. C. Patterson & Associates, York, Pa.

Editor's Note: Mr. Ruff, a professional engineer specializing in refrigeration, designed and developed the warehouse floor layout and door system described in this article in coordination with the owners and architect Mr. Van Renssaler P. Saxe of Baltimore.

With the consumption of frozen foods on a steady increase, the efficiency of the cold storage warehouse becomes rapidly more important. Shipments in ever-growing volumes have to be packed and handled with extra speed and care.

It is of great significance also that the amount of space devoted to the storage of frozen foods in public refrigerated warehouses has more than doubled since 1930. To keep pace with the need, the industry has grown by leaps and bounds. Warehouses have been built in great numbers for processing storage, long-term storage, and distributor storage.

One of the early trends toward increasing efficiency in cold-storage warehousing has been the widespread use of pallets and mechanical materials handling equipment. In the newest refrigerated warehouses, both operator and merchandise are conveyed in and out of cold storage on mechanized trucks and carts.

Palletized Handling Cuts Cost, Ups Efficiency

Palletized handling saves operating costs and makes maximum use of storage space. Some manufacturers even palletize at the processing point and let their product remain in palletized loads until it reaches distributor storage. Then it is broken down into commercial and consumer deliveries.

No mechanized handling system, however, can be of any real value unless the warehouse has a good floor plan and easy access to the cold storage rooms. These additional factors were taken into account in the design and construction of the new refrigerated warehouse of the Merchants Terminal Corporation at Landover, Md.

This building was planned for the swift, logical flow of goods. Its layout permits smooth and direct movement of merchandise with no waste motion or delay. The entire operation is on one floor to avoid elevator bottlenecks. Every design detail offers the full benefits of mechanized handling and palletized storage.

The Landover warehouse, built for sub-zero storage and quick-freezing, is the largest plant in the world refrigerated with a "Freon" system and one of the largest cold storage warehouses in the United States. It measures approximately 400 ft. by 485 ft. and has more than 2 million cubic feet of storage space. This gives the plant a storage capacity of over 300 million pounds.

Basically, the new warehouse is square in shape with a truck platform and railroad dock at opposite ends of the building. The truck platform alone serves as many as 42 trucks simultaneously. Connecting the truck and railroad loading docks is a 50-ft. wide central transfer corridor. Thus merchandise received at the railroad platform can move straight through the warehouse to the truck-loading platform. Checking offices at both ends of the corridor record all incoming and outgoing shipments.

This turnpike-like service corridor and checking office system permits exact control over product inventory. Pallet men keep a more accurate record of goods stores by checking pallet loads. Traffic conditions are also improved on the 20-ft. wide truck and railroad platforms, since empty pallets and other storing equipment can be temporarily stored along the corridor. This leaves both docks uncluttered and free for full use.

CENTRAL traffic corridor divides the two main storage areas on either side. Storage crates and pallets are shown stacked on both sides of the passageway. A checking office and truck platform can be seen at the far end.

There are two main cold storage areas on either side of the central corridor. The temperature in each is held at -5° F. In one side there is one huge freezer storage room 260 ft. by 202 ft. in area.

On the opposite side of the corridor is a large cold storage room 202 ft. by 146 ft. and two smaller freezer compartments 116 ft. by 116 ft. and 116 ft. by 86 ft. in size. All of the above-described chambers are 20 ft. high.

Inside one of the large freezer rooms are two quick-freezing tunnels which receive all incoming fresh merchandise. These operate at -40° F., and have a daily capacity each of 120,000 lbs. Used mostly by meat packers, the twin freezers lower the temperature of fresh meat in about 15 hours.

Unique Door System

The heart of the plant's materials handling efficiency is in the unique cold storage door system developed with the cooperation of the Jamison Cold Storage Door Co. of Hagerstown, Md. Usual practice in building a warehouse such as this is to install a row of single or double-leaf hinged doors down the corridor on both sides sides.

Instead of this conventional arrangement, products going in and out of the main freezer rooms pass through just one set of in-and-out door on each side of the main traffic corridor. Each of the two door groupings consists of two large horizontal sliding doors, four vestibule or batten doors, two wicker doors built in the horizontal sliding doors, and a personnel door between them.

The in-and-out doors are side by side and centrally located in the corridor, providing only one entrance and one exit to each of the two large cold storage rooms . . . exclusive of two personnel and two safety doors. All traffic is one way, thus providing added safety.

This single entrance and exit system of cold storage doors costs considerably less to install than the standard arrangement of many hinged doors. It also provides greater handling efficiency because it is better adapted to fast, mechanized traffic. Shipments amounting to one million pounds or more have been moved through one set of doors in 12 hours.

Fork Lift Trucks Move at 5 M.P.H.

Fork lift trucks are able to move as fast as 5 m.p.h. through the new door system. The speed of these trucks is such that they can cover the distance from one end of the central traffic corridor to the other with safety in a matter of seconds.

Another important advantage of this limited access is that it reduces costly refrigeration loss from the in-and-out traffic that would normally flow through many doorways. Naturally, the fewer the doorways, the less chance of cold air escaping when the doors are opened. The net result is to minimize the amount of refrigeration needed and ease the problem of defrosting coils. The new sealing system cuts in half the time and effort spent de-icing coils.

In addition, a specially insulated and air conditioned vestibule within each entrance and exit system removes moisture from the air, preventing formation of ice on inner surfaces.

Having the entrance and exit doors side by side also means that the outside air pressure is the same on both doors. This avoids cross-room convection which would ordinarily increase the refrigeration load.

On the corridor side of the in-and-out grouping are four horizontal sliding doors, each sealing an opening 8 ft. wide by 9 ft. 6 in. high. They overlap 4 in. on both sides of the doorway and 4 in. at the top. These doors are closed at night and over weekends when there is no traffic in and out of the main freezer rooms.

Small Wicket Doors For Personnel Safety

Built into some of the big sliding doors, which close off both the entrances and both exits, is a little wicket or personnel safety door which enables warehousemen to leave and enter the cold storage rooms without having to open the sliding doors. These big outside doors are generally hard to open from the inside.

Use of sliding doors practically eliminates maintenance problems, especially in view of the fact that the doors under normal conditions are used only twice a day . . . once in the morning when they are opened, and again at night when they are closed. An 8-ft. wide door on hinges, opened and closed many times a day, would cause serious wear on the gasket. There would be another problem with such a heavy door of keeping hinges in alignment.

A door 8 ft. wide that swings on hinges, furthermore, takes up a lot of space when it is opened. This could slow down traffic, endanger personnel, and prevent erection of safety piers in the corridor outside the door.

Inside each entrance and exit are two sets of one-way vestibule or batten doors at the near and far ends of a 30-ft. long vestibule. The first set of batten doors is just inside the sliding door on the entering side, and enough distance away on the exit side to give adequate clearance between the sliding door and open batten doors when merchandise is taken out. The second set of batten doors on each side is at the terminus of the corridor opening into the freezer rooms.

Design of the vestibule combination permits passage of a fully loaded lift truck and trailer, each carrying two pallet loads. In this way, it is possible for a lift truck operator to convey 8,000 lbs. of merchandise through the door system in one load.

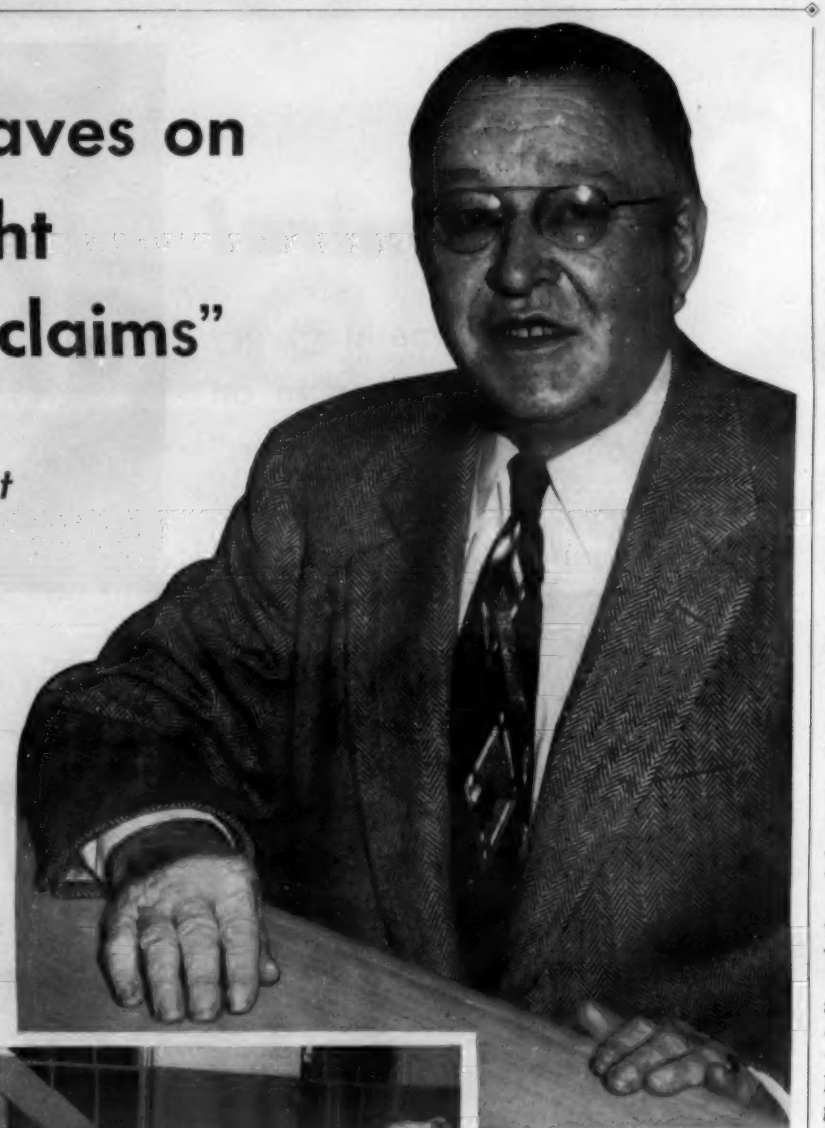
Storage Room Operators Wear Heated Suits

As a rule, relatively small trucks deliver and remove loads from the cold storage rooms. Once deliveries are inside the rooms for storage, an operator in an electrically heated suit stacks the palletized loads with a large captive stacking truck. Use of these heavy duty stacking trucks for palletized

(Concluded on next page)

"Art Metal saves on assembly, freight and damage claims"

says Albin Johnson, Company Vice President



"— and we have a better container, since we began using Atlas Plywood's Ply-Fold crates for shipping Art Metal desks," Mr. Johnson reports.

"We particularly like the fact that Atlas Plywood Ply-Fold crates come to us partially assembled. That saves us valuable assembly time. We know, too, that these Ply-Fold crates keep our desks snug and undamaged in transit. This is a gain in convenience, economy, and efficiency.

"So you can say that our decision to investigate Atlas Plywood's lab-testing methods has given us substantial savings in everything that has to do with shipping our product."

Art Metal desks are built and finished with care — and Atlas Plywood's Ply-Fold crates "handle them with care." Desks feature smooth-sliding drawers, generous knee space, smart appointments . . . crates keep desks tight and shift-free in transit.

Safe and economical traveling is assured this Art Metal desk. The Ply-Fold crate protects all its smooth surfaces without expensive padding . . . it packs in cars without wasting space, is strong, durable, light . . . protects desk from bumps and jolts.

FREE Booklet!

New, illustrated 24-page booklet, "How Atlas Plywood Cuts Your Shipping Costs . . . Safely", may help you avoid needless product damage or too-high freight costs. Write — or see your Atlas Plywood representative (see yellow pages). Learn about the laboratory where Atlas Plywood containers win their lab-tested label. Atlas Plywood Corporation, Dept. ACR-9, 1432 Statler Bldg., Boston 16, Mass.

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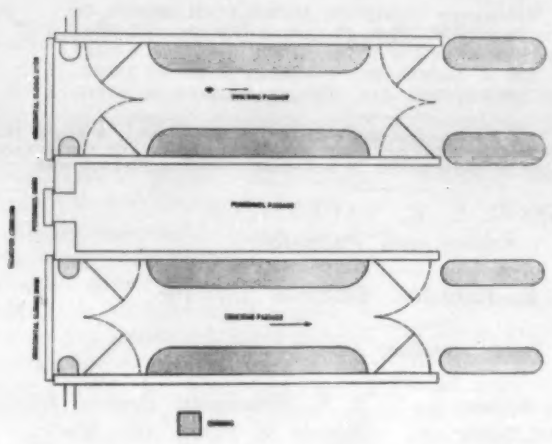
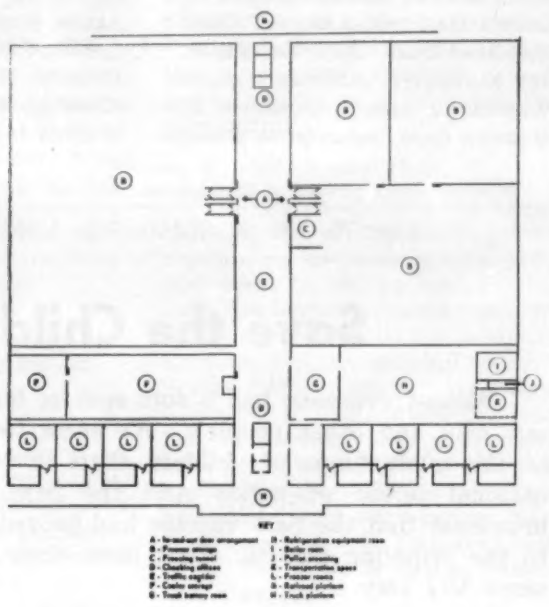
PLYWOOD CONTAINERS • FLUSH DOORS • HARDWOOD PANELS

LAB TESTED

Commercial Refrigeration



SIMPLIFIED layout of Merchants Terminal cold storage warehouse.



DRAWING shows essential features of unique vestibule door arrangement used to handle high volume traffic.

Frozen Food Warehouse Layout--

(Concluded from preceding page)

loads simplifies handling.

Trucks enter and leave the cold storage rooms merely by banging open the batten doors which have bumpers of heavy spring steel to absorb the impact.

The 30-ft. vestibule is insulated and air conditioned between the batten doors to remove the moisture content from the air that rushes into the cold storage areas when the doors are opened. Pipes carrying warm oil are built into concrete wearing floor underneath the vestibule. This is to prevent formation of ice on the floor. Under this 7-in. thick concrete flooring is a 4-in. layer of corkboard and a second concrete layer 12 in. deep. Air in the vestibule is dehydrated so that any moisture condensation in the air is evaporated by the warmth in the floor.

Metal clad plywood with corkboard insulation is used for the entire wall of the vestibule. This bright metal surface is vapor tight. Under normal circumstances, the wall would be made of plaster and cork, which is more subject to physical damage.

Curbing Provides Safety For Workers on Foot

Concrete piers with armor reinforced corners are on the corridor side and store room side of each entrance and exit to guide the fork life trucks. Also, inside the vestibule, down both sides, is concrete curbing wide enough for a man to stand on in case he is trapped in the passageway by an incoming or outgoing truck. The piers and curbing are designed to further safeguard personnel and prevent damage.

Though it is possible for workmen to leave and enter the freezer rooms through the trucking passageways, a personnel passage is provided in between. This is another safety precaution. After working hours, the only way to get in and out of the freezer rooms is by way of the personnel door which opens between the two large horizontal sliding doors on the traffic corridor side. Such safe and easy access is important to the watchman on duty.

An elaborate lighting system controlled by pushbuttons at both the entrance and exit doors makes it possible for the truck operator to light any part of the freezer room he desires . . . without getting off his truck. He merely picks the spot or spots he wants illuminated and punches the light switches with a gloved fist. An incoming operator can light up any bay in which he wants to work. A flick of the button on an easy-to-reach panel throws front and rear floodlights on entire bays. When he has finished working, the outgoing operator can turn off the lights just as easily on a separate panel arrangement.

Accurate refrigeration temperatures are maintained constantly throughout the plant. Armstrong cork insulation is used for all cold storage facilities. Temperature readings can be made at any time from a network of thermocouples in the main freezer rooms, quick-freeze tunnels and break-down rooms. The readings can be taken at various control panels.

A continuous log is maintained of temperatures in the different cold storage areas. Operating temperatures are recorded every 32 minutes at each location. Simply by pushing the station button for any area, it is possible to check the temperature of the air in that area, the temperature of the concrete sub-floor, and the temperature of the oil circulating in the sub-floor ventilation system.

Warm Oil System Prevents Frost Heavage

Frost heavage is prevented by a continuously operated sub-floor pipe grid system. Oil at 50° F. temperature is circulated through more than 5 miles of 1-in. pipe under both main freezer areas.

Altogether there are 14 individual refrigerated rooms used by packers, brokers, shippers, distributors, and customers of Merchants Terminal. The four main storage areas, with which we have been concerned so far, are freezer chambers. There are two cooler storage rooms 56 ft. wide by 17 ft. high kept at 32° F. One is 146 ft. long and the other 56 ft. long. Then there are eight 36-ft. square break-up rooms near the truck platform end of the plant. These rooms, kept at 0° or 32° F. as required, provide space for tenants to store and break up large shipments into smaller units for re-shipping or delivery.

A total of 36 different Jamison cold storage doors of various types are used throughout the warehouse. There are three safety doors for emergency exit. One leads from the smaller cooler storage room and the other two lead from the two main freezer rooms.

Two horizontal sliding doors connect the three large freezer compartments on one side of the central corridor. Then there are 14 doors in the single entrance and exit system described in this article . . . four horizontal sliding doors, eight batten doors, and two personnel doors. Finally, there is a conveyor passing door for personnel and a main swinging door for each of the eight break-up rooms.

OPERATOR on a fork lift truck pushes light switches before entering a cold storage room.

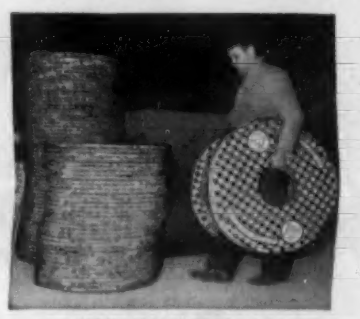
HORIZONTAL sliding door, in open position, reveals a fork lift truck pushing through a vestibule door on its way out of the exit side.

WICKET DOOR built into each horizontal sliding door allows personnel to leave and enter the refrigerated chamber without opening large sliding door.

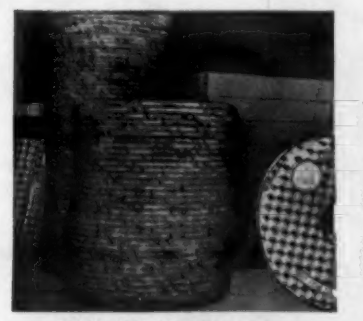
Picture the Advantages of
The New Wolverine Carton

For You—Make warehousing, handling and *selling* easy . . . That's what the sturdy new Wolverine carton for rolls of copper water tube, refrigeration tube and automotive tube will do for you. Here are actual, on-the-job pictures for proof.

YOU CAN ROLL IT!
No need to carry heavy rolls of tubing. Just roll them to storage or to truck.

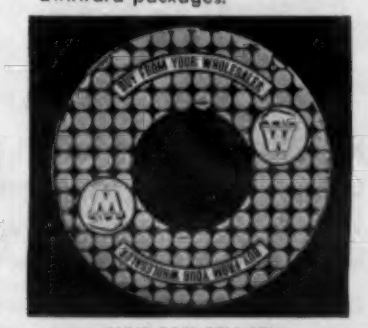


YOU CAN CARRY IT!
The arm hole in the middle of the carton eliminates wrestling with awkward packages.



YOU CAN STORE MORE!
There's better than a mile of tubing in these two stacks of flat coils.

YOU CAN IDENTIFY IT!
Nomenclature is reversed on the gummed tape around the carton. Color coded, too.



YOU CAN SELL IT!
It's a product you can merchandise to the hilt. Yes, it says BUY FROM YOUR WHOLESALER!

For Your Customers

Make the job easier! The carton does just that for your customers. Better make sure that you're stocked because they're going to be asking for it—again, again and again. *Order today!* Wolverine Tube, 1413 Central Avenue, Detroit 9, Mich.

IT CAN BE ROLLED
—like a hoop. Demonstrate this feature right in your shop.

IT'S EASY TO CARRY
—the arm hole makes it simple to carry to the job, up a ladder, wherever it's needed.

ZIP—IT'S OPEN!
A tug on the identifying tape does it. No need to destroy or mutilate the carton.

IT CAN BE USED AS A REEL
Tubing can be unrolled as needed —used right to the very end.

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WHAT A GUY! A MILLION LAUGHS! GIVE US A STORY, BIGGIE...
HI, JOCKO! HELLO, CHOLLE! WHY, WIGGIE, YOU LOVABLE LITTLE RASCAL! HEH-HEH...STILL GOT AN 8 HANDICAP? WHEN ARE YOU GOING TO QUIT THAT ONE-HORSE OUTFIT YOU'RE WITH AND COME TO WORK WITH ME, EH, PAL?
WHAT WOULD THE CLUB BE WITHOUT GOOD OL' BOOM-BOOM BIGDOME?
BUT GET A LOAD OF HIS OFFICE PERSONALITY... ('BYE, DR. JEKYLL-HOWDY, MR. HYDE...)
LOOK! ONLY TEN PERCENT INCREASE OVER LAST MONTH'S SALES! Y'CALL THAT SELLING? YOU'RE NOT ON THE GOLF COURSE HERE, Y'KNOW, WIGGINS! THIS IS BUSINESS! GET TO WORK, YOU DIRTY LITTLE GOLDBRICKER!
THE REST OF THE GALLEY SLAVES
THANX AND A TIP OF THE HAT[illegible] HAT TO FREDDIE HOLLIS, 32 MAIN ST., GENESEO, N.Y.
J.P. BIGDOME
1-31
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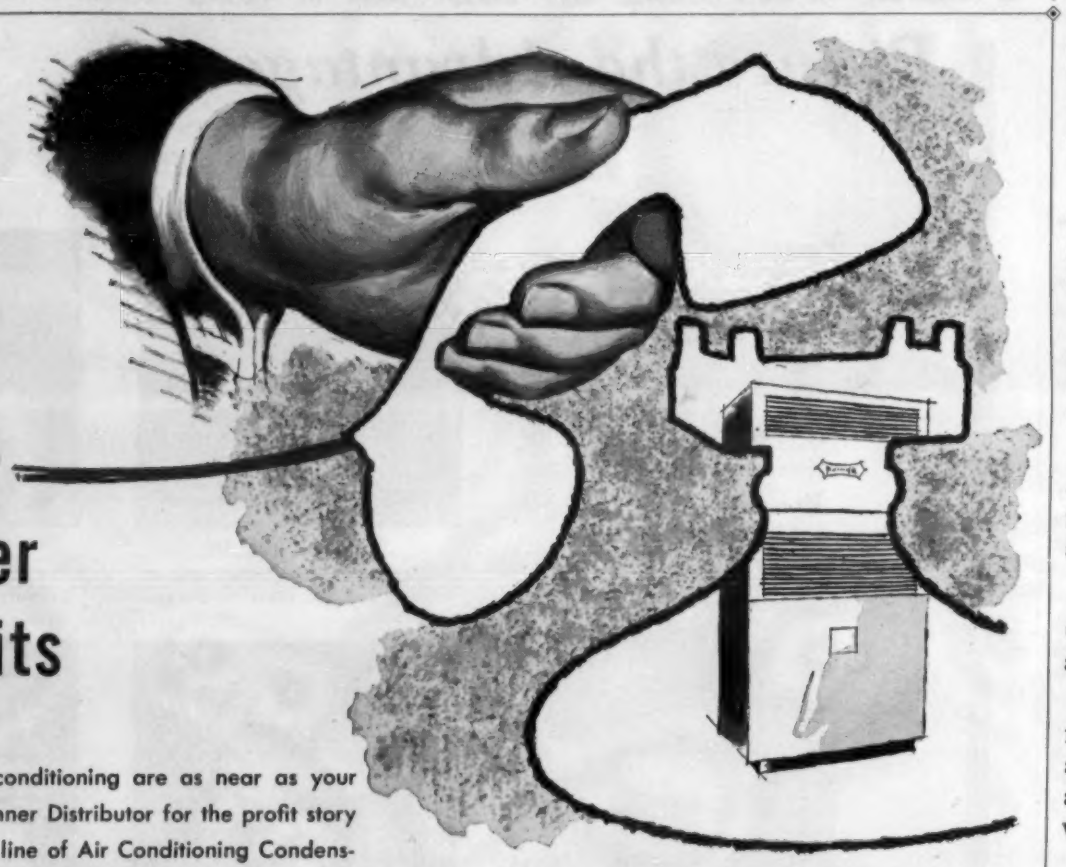
"I have always felt that whatever the Divine Providence permitted to occur I was not too proud to report. The people are not served by pussyfooting, or by that sort of journalism in which nobody will ask who is the editor of a paper or the writer of an article, and nobody will care."—*Charles A. Dana.*

Call for Bigger Profits



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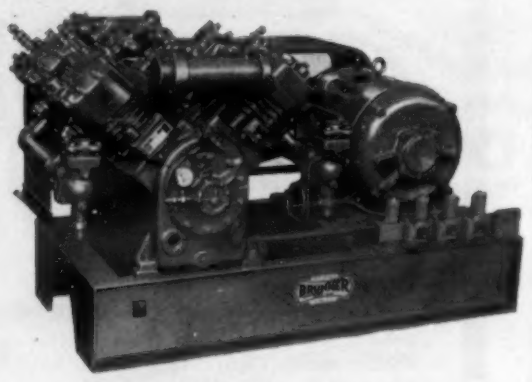

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Save the Children!

Almost everyone has a soft spot in his heart for children—our own and other people's. We seem to react more violently to the misfortunes of children than to our own. Witness the national terror of polio. And the rejoicing when word was broadcast that the Salk vaccine had proved an effective deterrent to the crippling disease. That news drew the biggest headlines since V-J Day.

We all give thanks to the work that the medical world has done to eliminate the dreaded disease. But while we do, let us remember that the refrigeration industry has a similar, if less spectacular, job to do itself.

We are referring, of course, to the continuing task of warning against and eliminating the death traps spawned by abandoned refrigerators. These tempting but lethal playthings are being spewed out at the rate of a million a year.

Fortunately most of them are being completely destroyed or rendered harmless. But constant and continuous vigilance is required to make sure that all of them are made so. We cannot afford the luxury of carelessness with even one discarded cabinet.

Unfortunately we cannot inoculate children against curiosity. Our weapon in the war against death traps is education. Like any weapon, it is a good and effective one if used properly.

With the return of warm weather and with children spending more of their time out of doors, the menace grows from the abandoned refrigerator discarded in a shed, field, or areaway accessible to children. So now is the time to wield our weapon with the greatest force.

The National Electrical Manufacturers Association and the National Safety Council have already taken it up on a nationwide scale. They are circulating hundreds of thousands of warning posters and informative data sheets directed at children and parents through such agencies as the PTA and the Boy Scouts. They are also urging the cooperation of everyone in the electrical industry to join in the effort.

The Refrigeration Service Engineers Society is active, too, providing its chapters with materials for educational campaigns and urging individual members to personally watch out for and disarm the killers.

Results of last year's campaign proved that it works. The number of children suffocated in abandoned boxes and the number of incidents were greatly reduced.

But even one such death is one too many!

Here's what you can do—and tell others to do—with discarded refrigerators or freezers to make them harmless:

1. Destroy the box completely. Or, if you want to use it for storage,
2. Remove the door, or
3. Remove the latch stop, or
4. Drill holes in the cabinet and remove the door gasket.

If the box is to be only temporarily out of use:

5. Remove the latch stop, or
6. Move the refrigerator so that the door is against the wall, or
7. Tie a wire or stout rope around the box, or
8. When possible, padlock the door.

Commercial Refrigeration

CRMA Conference, Plant Tour--

(Concluded from Page 1)

mizing the effects of continuously advancing material, overhead, and labor costs which high-volume economies are unable to absorb.

Among the reasons given for the industry's substantial volume growth over the past several years, the discussions disclosed, is the as yet unabated rapid rate at which new shopping centers are being built in suburban areas throughout the nation, the erection of hundreds of new retail food stores of the supermarket type in both existing and newly-established shopping centers. Another is the greatly increased aggressiveness of smaller food merchants in meeting competition from larger chain and supermarket operations, with attendant emphasis on complete-store modernization incorporating the latest in refrigerated food storage and display equipment.

Frozen Foods Field Brings Much New Volume

Constant introduction of new varieties of frozen foods, and the steadily rising consumption of all types, have also been responsible for much new volume, it was pointed out. The commercial refrigerator industry's sales of frozen food equipment last year, for example, accounted for 25.1% of all production, in contrast to only 14.4% five years ago.

Among the panel members who gave their views on various aspects of the industry's economic picture were L. O. Bower, executive vice president, Sherer-Gillett Co.; Reese L. Harrison, president, Friedrich Refrigerators, Inc.; W. B. McMillan, president, Hussmann Refrigerator Co.; Mark Allen, treasurer, Weber Showcase & Fixture Co., Inc.; A. J. Johnson, president, Puffer-Hubbard Refrigerator Co.; Robert L. Tyler, president, Tyler Refrigeration Corp.; George H. Mayhew, secretary and treasurer, Tyler; J. D. Harris, president, The Warren Co.; William Fogel, president, Fogel Refrigerator Co.; and Joseph W. Krall, president, McCray Refrigerator Co.

Each year CRMA selects one of its member companies to act as host member at the plant-tour and production conference session, on the basis of the firm's contributions to technical advances in the industry, product improvement, efficient use of tools and machines, and effective utilization of materials and components.

C. V. Hill Chosen Host

C. V. Hill & Co. was the unanimous choice of the CRMA membership, at its meeting held early last year, to act as host for the 1955 conference. Among the Hill officials who greeted the delegates arriving for the meeting were J. Stuart Hill, board chairman; Chauncey V. Hill, president; Herbert A. Stewart, vice president of manufacturing; H. Roy McPhail, works manager; Donald E. Voorhies, director of engineering; Earl J. Kressler, credit manager; and A. K. Thornley, Jr., sales promotion manager.

Question Period

On plant tour day the visitors assembled at the Hill factory, where, after being divided into groups of six, each led by a member of the Hill production, sales, or management staff, they were escorted through the entire plant operation. This was followed by an extended question period in which a panel of Hill production executives, headed by Stewart, explained the techniques and processes observed by the visitors, on a "no holds barred" basis.

Assisting him on the panel were McPhail, Fred Smith, factory superintendent, and Voorhies. Chester K. Litman, president, Koch Refrigerators, Inc., acted as moderator.

Following the question period, a group of panelists gave a critique of Hill operations and methods. Each expressed himself as favorably impressed with what he had seen, and complimented the management on a number of unusual production ideas that enable the company to maintain a high rate of productivity despite the severe space limitations it shares with most members of the industry today.

This panel was composed of Stuart Bergman, production manager, Friedrich Refrigerators, Inc.; John R. Caulk, Jr., vice president of Hussmann Refrigerator Co.; John Romadka, president, Federal Refrigerator Mfg. Co.; and Bower.

A round table discussion occupied the remainder of the program. Among the topics on which ideas and suggestions were exchanged were the greatly increased importance of members' designing departments in developing equipment capable of meeting the ever-changing demands of the user, and the constant battle against rising costs, to which the alert production man can contribute much through more efficient plant layout, developing incentive systems that are fair to both management and the worker, better utilization of materials, closer coordination of supply, and elimination of waste and spoilage.

Color Discussed

The current emphasis on color for food store fixture exteriors was cited as an example of the first type of problem mentioned; for an industry that for nearly a century has been accustomed to "any color whatever, just so it's white," the sudden transition to all hues of the rainbow has had a strong impact.

All agreed, however, that the initial obstacles have now been overcome, and that aside from the still bothersome factor of higher cost, the customer who wants quick delivery on, perhaps, a shocking pink meat case, with a pale chartreuse vegetable case and an azure blue reach-in with yellow polka dots can usually be accommodated.

Closer liaison between the sales department and the factory, so that the impact of model changes may be minimized by proper scheduling to permit amortization of retooling costs was also stressed as a prime objective, and one that too often finds the production department in a "damned if they do —damned if they don't" position.

More frequent reviews of sales forecasts so that materials purchasing can be accurately controlled, and the most economical production runs for a given model provided, was urged as a solution to this particularly irksome problem.

It was announced that CRMA's sixth annual plant-tour and production conference would be held in Kansas City next spring, with Koch Refrigerators as the host member.

CRMA Group Ready for Tour of C. V. Hill Plant

PORTION of Commercial Refrigerator Manufacturers Association group assembled for inspection trip through C. V. Hill & Co. plant, Trenton, N. J., in connection with CRMA's fifth annual plant tour and production conference. Nearly 100 attended the manufacturers' conference.

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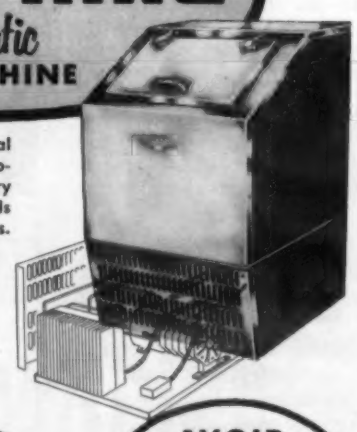

Kube King, the leader in practical design, economical operation produces approx. 2,000 kubes every 24 hours . . . storage bin holds about 75 lbs. . . . uses only 5 qts. of water per freezing cycle.

CRYSTAL CLEAN CYLINDRICAL KUBES WITHOUT HOLES!

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Hi-F Air Cooled Condenser for mounting in stand on roof or remote outside location—also indoor installations with discharge duct to outside. Low Cost. ELIMINATES USE OF WATER. ¾, 1, 1½, 2, 3, 5, 7½ and 10 ton capacities.

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The Hi-F Air Cooled Condenser is the culmination of years of know-how reflected in a design that assures maximum B.T.U. capacity season after season. In addition, the new and exclusive patent-applied-for Peerless manufacturing process is so efficient and rapid in operation that on time delivery is assured to any contractor even under emergency conditions.

Write for Bulletin No. NW 155 containing full engineering information on the Hi-F Air Cooled Condenser.

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Florida, Georgia Utilities Study and Help Dealer Promote Heat Pump for Home, Commercial Uses

By C. Dale Mericle

ST. PETERSBURG, Fla. — For years a great many people have talked about heat pumps, but relatively few have done much about them.

Notable exceptions, however, are Florida Power Corp. and its affiliate, Georgia Power & Light Co., serving sections of Florida and Georgia, which have been actively and successfully promoting heat pump installations for the past 10 years.

The utilities now have well over 1,000 heat pumps on their lines, both commercial and residential, thanks to concentrated efforts which have been largely directed by Guy C. Hall, supervisor of Florida Power's Air Conditioning Department.

2 Utilities Serve 1,074 Heat Pump Installations

As of Dec. 31, 1954, there was a total of 1,074 heat pumps served by the two utilities. Of these, 714 were in commercial applications and 307 were residential. The latter included 133 heat pump room units; the former, 475. In addition, the utilities have 53 heat pumps on its own properties.

By using heat pumps itself, Florida Power is doing more than just "practicing what it preaches," Hall points out.

"These installations give us a chance to study carefully various makes and applications so we're in a much better position to advise our customers," he explains.

2 Firms Set Quota For Heat Pumps for '55

This year should see a considerable number of heat pumps added to the lines. In fact, the two firms have established a quota calling for 3,025 tons of commercial heat pumps plus 1,500 tons of residential heat pumps, including window units.

In addition to heat pumps, they expect 6,350 tons of commercial air conditioning and 1,500 tons of residential air conditioning, including window ar conditioners.

What Florida Power and Georgia Power plan to do this year, and how they hope to do it, is best outlined in their official policy. Regarding commercial air conditioning and heat pumps, the utilities state:

"Following the 1954 peak year for air conditioning and heat pump sales, we anticipate an even larger year for the sale of all types of conditioning equipment in 1955.

"The Air Conditioning Department sales program for 1955 will be directed primarily to the promotion and sale of the heat pump. To accomplish this, we will increase our engineering and sales assistance to customers, builders, dealers, electrical contractors, air conditioning and heating engineers, and architects on all types of comfort conditioning.

"As a part of our program, we have compiled and classified a complete list of air conditioning and heat pump dealers and distributors for each Division and District of our system.

Will Not Compete with Dealers, Distributors

"The company believes that air conditioning and heat pump equipment can best be sold and financed through regular dealers, distributors, and financial institutions; therefore, our activities will be confined to promoting the sale and use of this equipment to our customers.

"Sales meetings with all dealers who are now selling air conditioning and heat pump equipment will be held to assure them of our sincerity in cooperating with them in the promotion of every phase of comfort conditioning. In carrying out these sales meetings in the Divisions and Districts with our present dealers, it is our intention to develop new dealers in the air conditioning and heat pump field.

"We will also hold meetings with customers, contractors, architects, and builders throughout our service area.

"The company will actively promote the heat pump where it is considered best suited to the individual installation.

Will Limit Surveys, Plans To Average Size Jobs

"The company will continue to make surveys and prepare plans for average size air conditioning and heat pump installations. We will reserve the right to limit the size of these installations to the average small jobs that are not usually done by design engineers. We will, in all cases, recommend the use of a design engineer on the larger installations.

"It will be the responsibility of the dealer to guarantee the operation of equipment sold and to furnish adequate service facilities. The company will not at any time guarantee the performance of any type or make of equipment.

"The company will maintain a completely neutral position with regard to the make of the air conditioning and heat pump equipment. The company will maintain in strict confidence the name of any prospective customer when information is requested by the dealer, architect, or design engineer.

"If, at any time, the customer cannot secure service from the dealer who sold the equipment, we will render emergency service or recommend a qualified serviceman or company.

"We will work very closely with manufacturers on the design of equipment to suit our climate conditions and furnish them with field experience. We will, in conjunction with manufacturers, hold service training schools for dealer service personnel.

"We will furnish qualified per-

(Continued on next page)

Approximate Heat Pump Operating Cost for Residences Per Year at 1½¢ per Kwh.

		Zone I*		Zone II†		Zone III‡	
Cooling Hours		2,274		2,036		1,850	
Heating Hours		383		553		849	
		2,657		2,589		2,699	
Size		Kwh.	$	Kwh.	$	Kwh.	$
½ hp., .9 kw.	Cooling	2,050	31	1,830	28	1,670	25
	Heating	345	5	498	8	764	12
	Total	**2,395**	**36**	**2,328**	**36**	**2,434**	**37**
¾ hp., 1.2 kw.	Cooling	2,730	41	2,440	37	2,220	33
	Heating	460	7	664	10	1,020	15
	Total	**3,190**	**48**	**3,104**	**47**	**3,240**	**48**
1 hp., 1.5 kw.	Cooling	3,410	51	3,050	46	2,780	42
	Heating	575	9	830	12	1,270	19
	Total	**3,985**	**60**	**3,880**	**58**	**4,050**	**61**
2 hp., 3 kw.	Cooling	6,820	103	6,110	92	5,550	83
	Heating	1,150	17	1,660	25	2,550	38
	Total	**7,970**	**120**	**7,770**	**117**	**8,100**	**122**
3 hp., 3¾ kw.	Cooling	8,530	128	7,640	114	6,940	103
	Heating	1,440	22	2,070	32	3,180	48
	Total	**9,970**	**150**	**9,710**	**146**	**10,120**	**151**
5 hp., 5¾ kw.	Cooling	13,100	195	11,700	176	10,600	160
	Heating	2,200	33	3,180	48	4,880	74
	Total	**15,300**	**228**	**14,880**	**224**	**15,480**	**234**
7½ hp., 8½ kw.	Cooling	19,300	290	17,300	260	15,700	236
	Heating	3,260	49	4,700	71	7,220	108
	Total	**22,560**	**339**	**22,000**	**331**	**22,920**	**344**

*St. Petersburg.
†Central Florida.
‡N. Florida & S. Georgia.

Heat Pumps Installed 1946 Through 1954 on Lines of Florida Power Corp. and Georgia Power & Light Co.

	Residential				Commercial			
	Central Systems		Room Units		Central Systems		Room Units	
Year	No.	Tons	No.	Tons	No.	Tons	No.	Tons
1946	....	....	....	....	1	5	....	....
1947	5	21	....	....	4	30	....	....
1948	2	6	....	....	2	10	....	....
1949	3	15½	....	....	2	153	....	....
1950	5	32½	....	....	8	53	....	....
1951	16	86	....	....	11	147½	....	....
1952	15	69½	....	....	85	688	4	3
1953	74	274	11	10¼	63	737	155	113¾
1954	54	220½	122	100	63	1334½	316	246
Total	**174**	**725**	**133**	**110¼**	**239**	**3158**	**475**	**362¾**

	Total Units	Total Tons
Residential	307	835¼
Commercial	714	3,520¾
Company Jobs	53	395
Totals	**1,074**	**4,751**

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BIG PROJECT DEVELOPMENTS

...with Marvair AIR CONDITIONERS

EVAPORATOR SECTION
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3-TON REMOTE for Homes up to 2,000 sq. ft. . . . delivers 36,500 BTU at 95°F. outside ambient
2-TON REMOTE . . . up to 1,300 sq. ft. . . . delivers 24,300 BTU at 95°F. outside ambient

New REMOTE Waterless MARVAIR

. . . is your answer to the need for a quality-built air conditioner that meets every home requirement, every budget!

Conforms to all FHA and VA specifications, per Bulletin ME-12, including double drip pan, double condensate drain. And the oversize condenser and evaporator coils assure excellent performance, even in hottest climates.

You can recommend the *Remote* MARVAIR with complete confidence. It has the qualities that assure a 100% satisfactory job.

- EASY TO INSTALL! Weatherproofed condenser goes outdoors, in garage, basement or attic. Unit completely wired. Tubing easy to connect.
- WATERLESS! Air-cooled. No water tower, no water expense.
- QUALITY THROUGHOUT! Precision-built of finest materials, by an outstanding leader in heating and air conditioning.
- LOWEST-COST REMOTE SYSTEM ON THE MARKET!

Marvair the Complete Air-Conditioning Line

For Every Home, Store and Office Need!

The *Remote* Marvair is available with horizontal-flow evaporator, with or without blower; and vertical-flow "A" type evaporator for installation below or above any warm-air furnace.

Water-cooled MARVAIRS include vertical type with or without plenum, for single-room cooler or with ducts for homes, stores or suites of offices; horizontal type with ducts, for any updraft or horizontal forced-air furnace.

The only complete line not restricted to franchised dealers. For more volume, more profit, go MARVAIR all the way!

Marvair Horizontal or Duct Type Water-Cooled Air Conditioner (above)
Marvair Vertical Type Water-Cooled Air Conditioner (right)

Marvair AIR CONDITIONER

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MUNCIE, INDIANA

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NEW FLO INDICATOR FLAP SHOWS ALL FLOW CHANGES

Analyze flow, function of expansion valve, by means of E-Z to SEE sensitive flap, instantly responsive to variations in flow. Positively leak-proof — hundreds of thousands in use.

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Heat Pump Operating Costs In South--

(Continued from preceding page)

sonnel to assist dealers in maintaining exhibit booths at all home shows and county fairs at which dealers are displaying air conditioning and heat pump equipment. We will also furnish typical photographs of actual installations along with operating cost data and will assist the dealer in answering any questions that pertain to comfort conditioning."

Regarding residential heat pumps and air conditioning, Florida Power Corp. outlines its policy for 1955 as follows:

Will Tie In With EEI Coordinated Program

"The air conditioning sales program for 1955 will be a year-round activity featuring year-round comfort, with special emphasis during June, July, and August—tying in with the Edison Electric Institute coordinated campaigns. Our advertising will create a greater impact on the customer at the point of purchase where the sale is made.

"We will work with customers, builders, dealers, electrical contractors, architects, and air conditioning engineers.

"The company has been a leader in the development and promotion of the heat pump. We now have more heat pumps installed on our property than any other utility. The heat pump will be recommended in every case where it is considered to be the best solution to the customer's problem—with comfort, convenience, and economy of operation considered.

"Residential sales representatives will make surveys and submit them to the Air Conditioning Department for estimates, completed plans, and recommendations. All prospects secured by sales representatives and home service advisers will be turned over to dealers and no brand names will be recommended.

"Special attention will be given to adequate wiring and voltage, especially in connection with room conditioners, more particularly in communities where there is no specific regulation applying to room units. Every effort will be made to assist the customer and dealer in selecting and installing ample capacity for the particular job. 230-volt units will be recommended on all air conditioners above ½ hp."

The preceding leaves no doubt as to where Florida Power Corp. and Georgia Power & Light stand regarding heat pumps.

How well they've succeeded in the past is indicated on the accompanying table.

Growth of Heat Pump From 1946 to '54

This shows that back in 1946 a single 5-ton heat pump was installed in a commercial application. The next year saw nine units go in, five in residential and four commercial.

Compare this with 1954 when residential applications numbered 54 plus 122 heat pump room units while commercial applications totaled 63 plus 316 heat pump room units.

The 1,074 total installations to the end of 1954 represent a total tonnage of 4,751 tons. Of this, 835¼ tons are in residential; 3,520¾ tons in commercial; 395 tons on utility property.

Although we are primarily concerned here with heat pumps, it is not amiss to mention that the utilities, at the end of last year, figured they also had 8,833 tons of residential air conditioning and 19,321 tons of commercial air conditioning on their lines.

Some of the typical company installations of heat pumps include 12½ tons at the Higgins generating plant in Oldsmar, Fla., a few miles north of St. Petersburg, and several installations in Florida Power Corp.'s headquarters building in the heart of the city.

Higgins Generating Plant Uses Bay as Heat Source

The ultra-modern Higgins generating plant, which burns oil, is located on Tampa Bay. The bay is used as the heat source.

"Conditions were such when this system was installed in 1949 that we couldn't use well water, city water, or a cooling tower," Hall says.

Two Marvair water-to-air heat pumps supply winter heating and summer cooling to office areas and the instrument room and laboratory. One is a 7½-hp. unit, the other a 5-hp. job.

Sweet water is circulated from the units through 2-in. bare copper pipe coils with serpentine configuration which are immersed in a canal leading to the bay.

The canal is used to carry condenser water from the generating plant back to the bay, so the water in the canal is probably somewhat warmer than that normally found in the bay proper, Hall indicates.

"Temperature of this heat source varies from 65° F. in winter to 95° F. in summer," he says.

Depth of the coil below water surface varies from 2 ft. to 8 ft., depending on the tide, Hall adds.

"The copper coils are holding up very well in salt water," he comments, "and we've learned that barnacles aren't necessarily a problem—something we weren't sure of before this installation.

Hot Water Kills Barnacles

"During the heating cycle, when cool water is flowing through the underwater coil, barnacles attach themselves to the tubing. However, when we switch to the cooling cycle, the hot water in the coil causes the barnacles to die. Yes, their shells remain on the coil, but these shells seem to improve the heat transfer rather than reduce it," Hall is convinced.

In addition to the two heat pumps, the Higgins plant has a 20-ton Worthington straight air conditioning system with evaporative condenser to cool the master control room. This is the nerve center of the generating plant where all the operation involved in producing electric power are closely controlled.

Heat pump installations in Florida Power Corp.'s headquarters building in St. Petersburg are several and varied. For example, a 10-ton Acme Flow-Temp unit serves the north part of the seventh floor; a Typhoon Prop-R-Temp 15-ton heat pump handles the south and west wings.

Both of these jobs are water-to-air units.

The fourth, fifth, and sixth floors also have year-round air conditioning with heat pumps. These are two Typhoon 10-ton water-to-air heat pumps serving serving each of these three floors.

Most recent addition is a 30-ton heat pump for an annex adjoining the main building which houses a large office and billing area.

"The annex is filled with many electrically operated business and calculating machines which are a source of considerable sensible heat. Thus we need 30 tons of summer cooling," Hall explains.

The system for the annex is a built-up air-to-air job which includes a 30-ton Trane compressor, a Kennard air-handling unit, and two 15-ton Kramer Trenton Unicon air-cooled condensers. Latter are installed on roof of annex.

Systems serving the seventh floor are worthy of further comment. A 14-in. well 350 ft. deep supplies 85° F. water as the heat source.

"The condensers are specially sized to use this temperature water for condensing while on the cooling cycle," Hall comments.

Chilled (or hot) water is supplied to convectors installed in the various offices. The convectors have individual controls to regulate fan speed. Modine room convectors are used with the Acme system serving the north side of this floor while both Modine and Drayer-Hanson convectors serve the Typhoon unit handling the south and west wings.

"Because most of the convectors were installed on an inside wall [cleverly concealed in closets] it was not practical to supply outdoor air to them," Hall says.

"For that reason, in each ma-

(Concluded on next page)

unquestionably

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IN ADDITION...

no other thermostat has all these great features!

- Compact, modern horizontal "New Look" in room thermostats.
- Attractive neutral-colored plastic cover blends with any color scheme.
- Single dial heating and cooling setting simplifies homeowner's operation.
- Penn "heat anticipation" holds heating temperature within one degree of selected level.
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- Complete flexibility of fan control to meet all design and application conditions.
- Choice of one manual switch for system and one for fan . . . or single manual switch combining both.
- Snap-acting magnet contacts, time-tested on Penn heating and cooling thermostats in over 20 years of field experience.
- Changeover from heating to cooling may be *manual only; automatic only;* or *combination manual and automatic* for homeowner selection according to his needs.
- Seven models available . . . for cooling only; heating and cooling; or heating and two-stage cooling . . . to fulfill all possible air conditioning needs.

Don't settle for less when Penn costs no more! Be sure the packaged air conditioning you sell and install is fully equipped with Penn automatic controls. **Penn Controls, Inc., Goshen, Indiana.**

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Quick-Wedge

SCREW-HOLDING SCREWDRIVER

2" to 14" blades, 4 bit sizes
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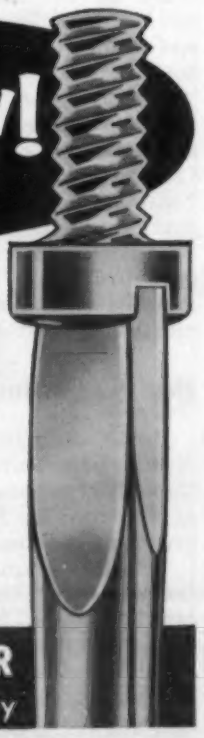


ASK FOR IT AT YOUR DEALER

Kedman Co., 233 So. 5th W., Salt Lake City

Heat Pump--

(Concluded from preceding page)

chine room housing the condensing unit there is a Drayer-Hanson convector which supplies tempered outdoor air, discharging into the hallways. We depend on normal exfiltration to dispose of the outdoor air brought in through this unit."

Automatic Flushing of Condensate Drains

Another interesting feature of these installations, Hall points out, is the provision for automatically flushing the condensate drains.

"As is general practice, the latter lead into open drains. During the heating season, however, there would be no condensate and so it is likely that the water in the traps of these drains would dry up, permitting sewer gas to come out of the open drains," he says.

"To avoid this we have a time clock which twice a day opens a solenoid valve in a water line to flush the drains and fill the trap."

As might be imagined, with all its own installations plus careful study of others, Florida Power Corp. is fully prepared to advise customers whether they should install a heat pump or not and give them an estimate of what it would probably cost to operate.

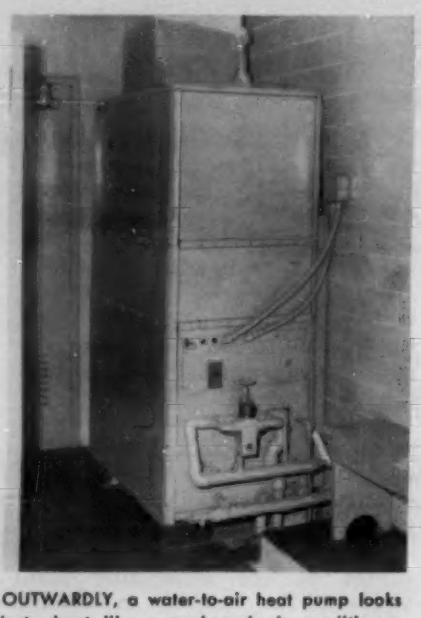
Approximate annual operating costs for cooling and heating a residence with a heat pump in the areas served by Florida Power and Georgia Power & Light are given in an accompanying table.

The costs vary with the size of the job, where it's located, living habits of the occupants, and numerous other factors, cautions Hall, but these costs are what the utilities use in discussing heat pumps with prospects.

It will be seen from the table that approximate annual costs vary from a low of $36 for a ½-hp. heat pump in the St. Petersburg area to a high of $344 for a 7½-hp. system in the north Florida and south Georgia district.

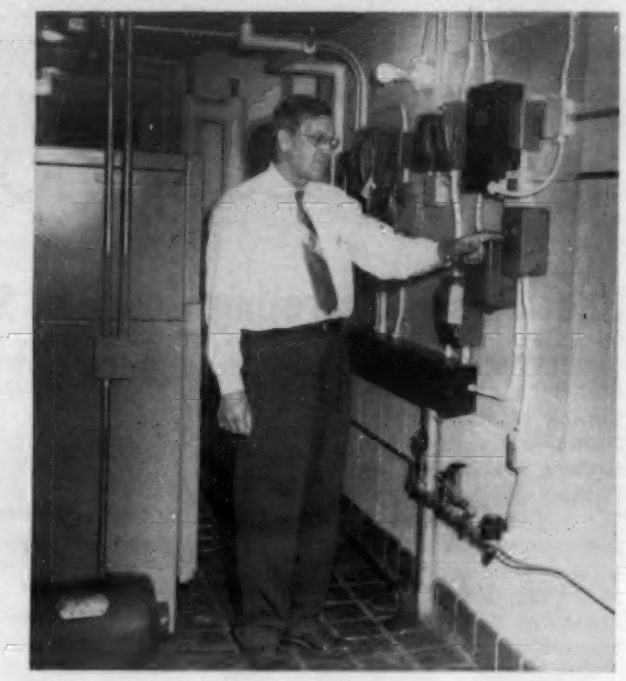
The cost figures are based on a power rate of 1½ cents per kwh. To these figures the utility adds a billing adjustment.

Similar operating cost estimates on commercial applications of heat pumps and straight air conditioning are also made by the two utilities, but there are so many variables involved that each application has to be studied virtually on an individual basis.

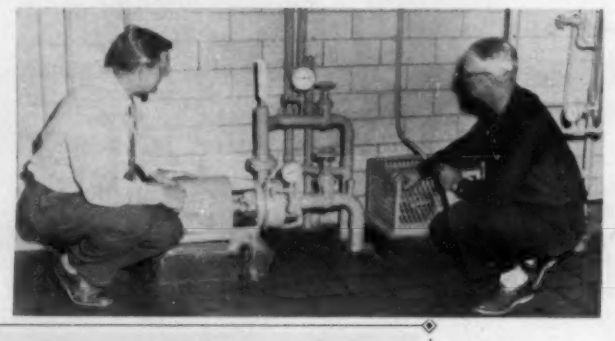


OUTWARDLY, a water-to-air heat pump looks just about like a packaged air conditioner, as this photo of a Marvair unit indicates. This is one of two units serving Higgins generating plant of Florida Power Corp.

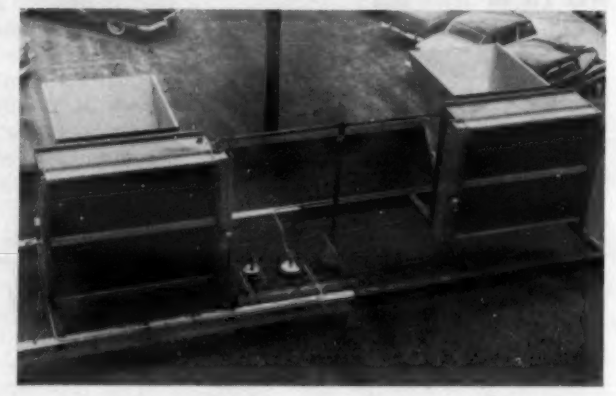
SOURCE of heat for Higgins plant heat pumps is canal which returns condenser water from power plant to Tampa Bay. Guy C. Hall points to copper pipes leading to heat exchanger in canal.



TIMER which twice daily flushes water down condensate drain when Typhoon heat pump (at left) is on heating cycle at Florida Power Corp.'s headquarters building is pointed out by Guy Hall.



PUMP which circulates sweet water between heat pumps and coil in canal is checked by Guy Hall (left) and Roy F. Marr, superintendent of Florida Power Corp.'s Higgins generating plant.



TWO 15-ton Kramer Trenton air-cooled condensers on roof of Florida Power Corp. annex provide heat source during winter for new 30-ton heat pump system.

James D. Willson Appointed Controller at O. A. Sutton

WICHITA, Kan. — Appointment of James D. Willson as treasurer and controller of O. A. Sutton Corp. has been announced by O. A. Sutton, president and chairman of the Board.

Willson is a graduate of Ohio State university in business administration and holds a master's degree from that school. He has received national recognition from two books, "Controllership — The Work of the Accounting Executive," and "Business Budgeting and Control," which he coauthored.

Willson was winner of the Lybrand Award of Merit for an article on "Control of Research Costs," which was published in the National Association of Cost Accountants bulletin.

Previous to joining the Sutton organization, Willson was treasurer for Affiliated Gas Equipment, Inc., Cleveland.

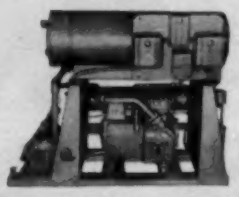
Blast Freeze Names Metzdorf

PARK RIDGE, Ill.—Robert B. Ayres, president of Blast Freeze Corp. here, announced the election of George R. Metzdorf as vice president of manufacturing.

Metzdorf formerly held a similar position at the McCray Refrigerator Co. In his new position, Metzdorf will supervise a multiplant assembly operation of the "Iceberg" line of drawer type freezers for Blast Freeze.

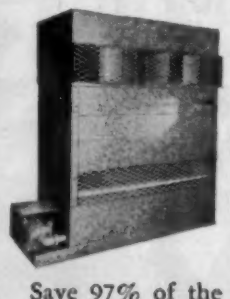
fits your business like a glove

When you take on the Acme Flow-Cold line you receive the backing of a firm with thirty-five years experience in serving the air conditioning and refrigeration industry. Acme products are field tested, proved in service. They are known as "the standard of the industry." They will make and hold customers for you.



FLOW-COLD **LIQUID CHILLERS**

These field proved packaged units, complete with compressor and all controls, are pre-piped, wired and tested — ready for quick, economical installation in air conditioning jobs requiring capacities from 2 through 15 tons.



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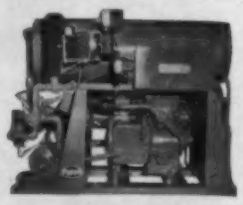
Save 97% of the water formerly wasted by air conditioning systems. These all-metal, blower-equipped towers are the most quiet, compact and efficient yet devised — unsurpassed for durability. Install indoors, outdoors. Capacities 2 through 15 tons.



FLOW-TEMP® **HEAT PUMPS**

Clean, flameless heat in winter, cool comfort in summer — both from a single unit. Flow-Temp Heat Pumps have been field proved from Michigan to Florida, in both residential and commercial installations.

FLOW-TEMP® **ROOM CONDITIONERS**

Companion units to the Flow-Cold Liquid Chillers and Flow-Temp Heat Pumps, these convectors supply each room with filtered, temperature-controlled air. For ceiling, floor, wall or recessed installations.

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THERMAL AGENCY

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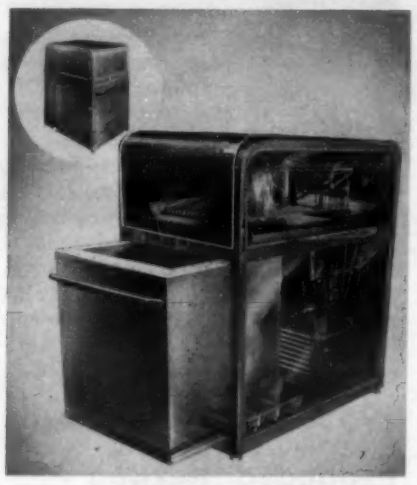
What's New

When requesting further information on new products, please use "Information Center" form.

Clear, Full-Sized Cubes Produced In New Ice Maker



—KEY NO. E-530—

MINNEAPOLIS — "Extra pure, full-size cubes produced in large quantities by a dependable machine" is claimed after eight years of research by Prolesel, Inc., Minneapolis producer and marketer of ice machines, for its new "Kleer Kube" ice maker.

Using an original process—termed "Inverted Rain"—the cubes are formed by spraying filtered and aerated water upward against the refrigerated platen, according to the company.

"The purer the water, the faster it freezes to form clear, solid cubes of commercial size and quality, while water containing any impurities falls into the drip pan to be 'purged' away and refiltered," it was explained. "Water is therefore purified in three ways—filtering, aerating, and purging.

"Filtered 100 times an hour, these cubes are purer than the water supply from which they are made and approach the purity of distilled water while maintaining the freshness of spring water," Prolesel said.

"Variations in pressure, temperature, and quality of input water don't affect the quality of the cubes, which can be produced in a capacity of up to eight bushels per day.

"Eight individually mounted components make up the machine, and a competent refrigeration repairman can install and service it easily.

"An automatic cut-off stops the machine when storage bin is full to prevent spilling of ice or waste of water. Non-corrosive materials are used in construction; cabinet is finished in baked impact-resistant Vinyl resin coating.

Additional specifications are: height—49⅜ in.; width—27½ in.; depth—44⅛ in.; shipping weight—650 lbs.; compressor—¾ hp. hermetically sealed; capacity of storage bin—5 cu. ft.; approximate price, f.o.b. factory—$1,595.

"Trouble-free performance . . . makes satisfied customers for me," says Ernest W. Farr, Bell Refrig. Corp., Cleveland.

TO GET ON THE MOST PROFITABLE FACTORY-DEALER TEAM IN THE BUSINESS, TIE UP WITH

TYPHOON AIR CONDITIONING
505 Carroll St., Brooklyn 15, N. Y.

- COMMERCIAL AIR CONDITIONERS, 2 TO 25 TONS
- RESIDENTIAL YEAR-ROUND UNITS FOR GAS OR OIL
- ROOM AIR CONDITIONERS, ½, ½, ¾, 1 H.P.
- PACKAGED HEAT PUMPS, RESIDENTIAL & COMMERCIAL

Combination Reach-In, Walk-In Added by La Crosse

—KEY NO. E-531—

LA CROSSE, Wis.—Addition of a combination reach-in, walk-in refrigerator called the "Kool'Kloset" to its line of commercial refrigeration equipment has been announced by La Crosse Cooler Co.

According to the company, the compact cabinet is adaptable to many applications. Usage possibilities include storage of eggs, packaged goods, bottled beverages, berries, etc. It is recommended for domestic as well as commercial usage. The refrigerator is said to be especially desirable for use as auxiliary storage space.

The Kool'Kloset is refrigerated with the company's self-contained refrigeration system "which is readily removable in the field."

The refrigerator is available in two sizes. One—model 919—is 34 in. wide and the other—model 920—62 in. wide. Both are 72 in. high and 48 in. deep. The smaller model is equipped with a ¼-hp. refrigeration system and the larger model with a ⅓-hp. plant. Both can be provided with a utility shelf.

The Kool'Kloset is shipped broken down in seven easily-handled sections, the company pointed out.

Drinking Water Coolers Feature Colored Tops

—KEY NO. E-532—

ERIE, Pa.—Tops in six decorator colors are featured in the new line of drinking water coolers announced recently by Uniflow Mfg. Co. here. The colors are spruce green, peer blue, burgundy, grey, black, and white.

Pressure-type coolers are available with bubbler or glass filler attachment utilizing foot pedal control. Coolers are available with or without refrigerated compartments. Cabinets are finished in pearltone grey or stainless steel. Bottle-type coolers are also finished in pearltone grey.

Prices begin at $220 list. There is no additional charge for the colored tops, the company said.

Soldering Set Developed For Copper Tubing

—KEY NO. E-533—

JOLIET, Ill.—A new tool for soldering copper tubing is the Plumbers' Portable Soldering Set developed by Wassco Electric Products Corp. here.

Consisting of an all-electric pliers soldering device and a 1,000-watt portable power unit, this equipment features safety and ease of use as there is no open flame, burn or fire hazard.

It operates from the nearest power outlet, eliminates gas supply problems, and is fast to rig and start work, the company said.

The unit can be used for soldering copper tubing "sweat" fittings up to 1¼-in. size and also for heavy electrical wire or cable.

It is portable and includes a pocket for pliers and leads.

Information Center

For *more information* on What's New products, current literature and catalogs available, equipment advertised in AIR CONDITIONING & REFRIGERATION NEWS use Key Numbers where designated or specify products advertised and we'll see that you receive this information promptly.

What's New or Current Literature Available

Key No. ..... Key No. .....
Key No. ..... Key No. .....
Key No. ..... Key No. .....
Key No. ..... Key No. .....
Key No. ..... Key No. .....

Products Advertised
(list name, page, and issue date)

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Here is *why* the SPORLAN *Catch-All* is the PERFECT FILTER-DRIER!

because

the famous Catch-All Molded Porous Core *catches-all* the moisture, corrosive acids, sludge and foreign matter that can possibly harm a refrigeration or air conditioning system.

Being molded of minute particles of a highly efficient desiccant, then double activated and moisture proof sealed after assembly, the Catch-All core dries the refrigerant down to an end point so low that any remaining moisture is absolutely harmless. Harmful corrosive acids are also adsorbed and retained. It cannot powder or pack, and the refrigerant cannot by-pass or channel around it. Even foreign matter as minute as nine microns is filtered out with negligible pressure drop.

That's why engineers everywhere say... if you want perfectly clean, perfectly dry, acid free refrigeration and air conditioning systems, buy Sporlan Catch-Alls, the perfect Filter-Drier!

Ask your wholesaler for the Sporlan Bulletin 40-10 today! You'll find Catch-Alls available in progressive sizes from 3 to 192 cubic inches in flare or sweat connections.

SPORLAN VALVE COMPANY
7525 SUSSEX AVENUE ST. LOUIS 17, MISSOURI
EXPORT DEPARTMENT: 89 BROAD STREET NEW YORK 4, NEW YORK

120 Tons of Air Conditioning, 68,000 Cu. Ft. Of Refrigerated Space In Webb's City Market

ST. PETERSBURG, Fla. — Krauss Air Conditioning, Inc. here reports that it has installed additional equipment at nationally-famous Webb's City under an expansion program which has added approximately 60,000 sq. ft. of floor space to this "amazing merchandising mart."

The building program has provided an additional 12,000 sq. ft. to the supermarket area, Krauss pointed out, "bringing it to a total of 22,800 sq. ft. and making it, we believe, one of the largest in the world.

"The above figures do not include warehousing or food processing and storage areas. Underneath the new market an area of 11,500 sq. ft. is provided solely for the purpose of packaging, processing, and storing of food for the retail store above."

Krauss Air Conditioning said that during the years, it has provided "virtually all of the air conditioning and refrigeration requirements of this most unusual 'Drug Store.'"

Although Webb's City is still referred to as a "drugstore," it includes 57 different stores under one management. It's a place "where you can get anything from a hair-do or hair cut and dancing lessons, to gas and oil for your car, plants and trees for the yard, or food for the family, furniture for the house, or most anything else which you might mention."

To date, Krauss has had a part in the installation of some 600 tons of air conditioning equipment. This includes three Carrier centrifugal machines having a total capacity of over 500 tons and also numerous packaged-type air conditioning systems about the building.

Krauss recently added a new 39H Carrier "Weathermaker" unit to the supermarket system. This brought the installed air conditioning capacity for this area alone to more than 120 tons.

"As the store has doors on four sides, air infiltration both summer and winter has been a severe problem, particularly at the rear doors, where a steady stream of customers flows in and out from 7 in the morning until 11 o'clock at night each day," the company noted.

"To offset the blasts of outside air entering these rear doors, Krauss, in the new installation, provided for blowing streams of conditioned air directly at the door openings.

"The air used for this purpose has an effective refrigeration capacity of over 280,000 B.t.u./hr. The store management reports this arrangement to be very effective in its operation."

In addition to the air conditioning, Krauss had contracts to provide for what it said "appears to be the largest retail refrigeration layout in the south." The contracts included furnishing complete, built-up cork insulated boxes, meat tracks, rails, shelving, etc., refrigeration equipment, and induced draft cooling towers and condenser water piping.

Krauss gave this run-down on what the refrigerated areas include:

1. Meat cutting and packaging room—1,700 sq. ft.; 25 to 30 people work here each day to supply the market's needs.
2. Meat storage room — 11,000 cu. ft., with trolleys, track, and shelving to handle and store up to 60,000 to 75,000 lbs. of meat.
3. Meat freezer—0°; 2,200 cu. ft.
4. Poultry room—6,250 cu. ft., with capacity to store 12,000 to 15,000 lbs.
5. Dairy box—5,300 cu. ft.
6. Fruit storage box—2,400 cu. ft.
7. Vegetable storage box—2,400 cu. ft.
8. Frozen food storage—10°; 14,000 cu. ft., with capacity for from 60,000 to 75,000 lbs. of frozen food products.

The refrigerated areas include a total of over 68,000 cu. ft., Krauss said. The equipment installed to serve it, including the cooling towers, requires a total of 76 hp. for operation.

The cooling tower and condenser water system installed by Krauss serves both the above-mentioned equipment and also all of the display case equipment for the market sales area.

"The tower having a total capacity of 150 tons was especially designed with two separated cells," it was explained. "Each cell has its own basin, fan, and pump, and can operate by itself to serve the total system, in event of failure on the part of the other unit.

"Both cells also can operate together as a unit under excessive load conditions. The arrangement practically insures continuous operation which is so vitally necessary to this type of operation."

Krauss noted the following highlights of the market's operation:

"A yearly volume of business of over $2,000,000 is handled in the meat department alone.

"Some 140,000 lbs. of meat are handled a week . . . 5,000 lbs. of picnic hams, 4,000 lbs. of bacon, and 30,000 lbs. of chicken in one day.

"Some 3,000 cases of frozen food, amounting to approximately 65,000 lbs., are sold in a week.

"It is the largest outlet for Swanson in the United States. As high as 8,400 pies have been sold in two days.

"It was the first single retail outlet in the country to buy packaged frozen food in carload lots direct from the packer."

Leon Bennett Handles 'Shana-Air' In Southeast

CHICAGO—Appointment of Leon Bennett Associates, Marietta, Ga., as sales representative in Georgia, Florida, Alabama, and Tennessee for "Shana-Air" air conditioning and heating equipment has been announced by Harry G. Shaffer, president of Shana Mfg., Inc. here.

Leon Bennett was formerly southeastern regional sales director for Duchess Div. of Dexter Co. (now owned by Philco Corp.). Before that, he was southeastern regional sales director for Tracy Mfg. Co. Bennett's organization has been in operation since 1936.

Unarco Names W. G. Smith National Service Manager

CHICAGO — William G. Smith has been named national service manager for the Union Asbestos & Rubber Co.'s air conditioning products, it was announced recently by Chester S. Stackpole, general sales manager of the company's Heating & Cooling Div.

W. G. Smith

Prior to joining Unarco, Smith was district sales manager for the east-central division of Servel, Inc., at Evansville, Ind. Stackpole said he will make his headquarters at Unarco's Greenville, Ill., plant.

1955 ASHAE Guide Expanded, Revised

NEW YORK CITY—The 33rd edition of the Heating, Ventilating, Air Conditioning Guide has been published recently by the American Society of Heating and Air-Conditioning Engineers.

The 1955 book has a 1,160-page technical section and an equipment section containing data on the products of 328 manufacturers.

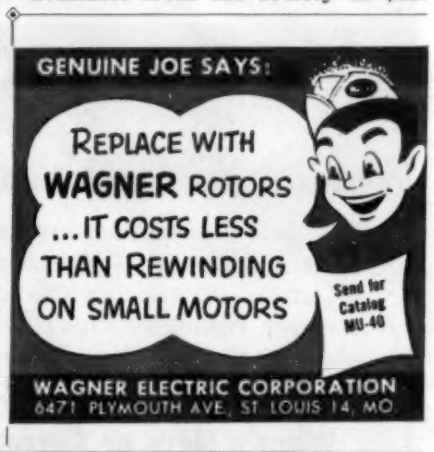
Many revisions and expansions resulted from research by the society and others, changes in codes and standards, new methods in product design, and improved engineering practices, the society said.

Several chapters were rewritten, a new chapter on schoolhouse heating and ventilating was added, and new information on heating systems using high temperature hot water was included.

Design information on thermal conductivities and conductances for pipe insulation and building materials has been reorganized.

The 6 by 9-in. book is now available from the society at $12.

HOT PROSPECTS
EVERYWHERE YOU LOOK
FOR
"BUILT-UP"
AIR CONDITIONING
SYSTEMS!
Servel
SUPERMETIC POWER UNITS
Super Money-Makers
for Refrigeration Contractors and Service Engineers
INSTALL
SERVEL FOR:
BUSINESS OFFICES
SPECIALTY SHOPS
HOTELS and MOTELS
CLUBS and RESTAURANTS
HOMES and APARTMENTS
Ask your Servel Wholesale Supplier for full details about the money-making line of Supermetic Full-Capacity Power Units — for High, Medium, and Low Temperature applications — or write the factory today.
Compact, quiet, full capacity — SERVEL SUPERMETIC POWER UNITS are super-right for remote-type applications. And you have plenty of prime prospects right now for air-cooling systems that can best be served with a "custom-built" installation.
SERVEL POWER UNITS can be mounted on any flat surface . . . using a minimum of space (7½ HP Model measures only 23⅛" x 17½" x 16" high) . . . powered with suction-cooled motors requiring no water connection to the compressor. Installations are quicker, more profitable, made without extra plumbing costs.
SUPERMETIC POWER UNITS feature force-feed lubrication that eliminates the need for manual oiling. All moving parts are fully enclosed against moisture and dirt. High torque motors start easily, operate smoothly. Don't miss this real opportunity to build your profits with "built-up" installations POWERED BY SERVEL! Sizes to 7½ HP to match almost any need.
SERVEL, INC., Commercial Refrigeration Division, Evansville 20, Indiana
Servel
THE NAME TO WATCH FOR GREAT ADVANCES
IN REFRIGERATION AND AIR CONDITIONING



Trane Gets Order for 140 Refrigeration Car Units from Santa Fe Railway

LA CROSSE, Wis.—The Santa Fe railway has recently placed an order for 140 freight car refrigeration units with the Trane Co. here, which is claimed by Trane to be one of the largest orders of its kind ever placed by a single railroad.

Santa Fe will build the 140 cars, along with 10 other mechanical "reefers" at its West Wichita, Kan. shops during 1955, Trane said. The new program will bring to 180 the road's total of mechanical refrigerator cars.

This order, Trane declared, raises to 580 the number of mechanically refrigerated cars being built by railroads, railway-owned private car lines, or private shippers.

A total of 675 such cars were already in service on Feb. 1, it noted.

Intended particularly for frozen foods, the new equipment will provide temperatures of 0 to -10° F. for the 50-ft.-long, super-insulated cars, which contain 3,054 cu. ft. of space—55% more than Santa Fe's conventional 40-ft. ice-cooled "reefers."

"The increasing frozen food traffic, now up to 3.5 billion pounds a year, is helping spur the railroads to install mechanical refrigeration," according to H. Corbyn Rooks, Trane vice president in charge of special heat transfer and transportation equipment.

"The roads are getting stationary warehouse temperatures with pushbutton control," he said, "enabling them to haul frozen foods cross-country, through desert heat and mountain cold, at desired temperatures regardless of weather outside.

"And mechanical 'reefers' add flexibility to freight handling as well as reducing spoilage," Rooks added.

"Pre-cooling time for refrigerator cars to be loaded is cut by one-fourth or more—cut to six or eight hours instead of 24 to 36.

"Also, one of the new cars—loaded with a big volume frozen food such as lima beams or citrus concentrates—can effectively maintain continuous sub-zero temperatures even if side-tracked for days without any special attention."

Each car can carry 128,000 lbs. of frozen foods, enough to fill more than 328 typical home freezers.

The heart of each refrigeration system is a nominal 15-hp. compressor developed by Trane in an experimental mechanical reefer car program launched jointly with Santa Fe in 1947. A sample car built in 1950 was rigorously tested in Trane's laboratory and on the railroad.

Commercial Refrigeration

Refrigeration Is Major Contributor to Merchandising Efficiency of Supermarket

DENVER — Refrigeration is a major contributor to the merchandising efficiency of the produce department at Busley's, huge new supermarket at 6th and Peoria Sts. in suburban Aurora.

Centered in a newly-developed residential area some 10 miles east of Denver, the new Busely store, seventh in the chain, has put special emphasis on the produce department.

Well separated from the rest of store, this section occupies 60 by 40 ft. of space at the front right of the store. Walls are done in soft grey pastel with gay flowers in natural colors handpainted above the open self-service refrigerated fixtures lining the right and front walls.

Two Hussmann 60-ft. self-serve cases intersect at right angles along these walls, one refrigerated to 40°, the other a dry rack of matching white enamel and stainless steel, following standard practice.

In the center of the floor are four slanting display racks 16 ft. long by 5 ft. wide, rising at an angle of 15° from front to rear. An innovation with Busley's, they are constructed of hardwood over which a metallic paint has been baked on. They are easily cleaned, moisture-proof, and undamaged by fruit and vegetable acids.

A series of five to eight trays—with sloping edges—are similarly finished, and can be lifted off when changing displays for cleaning. Each unit contains six bag compartments at the lower right rear.

"We've found that this design and the finish of the racks show advantages over either wood or metal," reported Robert Dudley, produce manager.

Immediately to the left of the central self-service refrigerated case is the department's major stock asset, a two-carload walk-in refrigerator just inside the stockroom entrance.

Built by Hussmann, the box is 22 ft. deep, 12 ft. wide, and 8 ft. high, with white enamel exterior finish and hardwood oak lining.

A single dome cooler in the ceiling provides circulating refrigerated air to maintain a temperature of 40°. Refrigeration is supplied by a 2½-hp. "Copelametic" compressor.

Produce, delivered by refrigerated trucks, moves by both conveyor and hand truck (according to the type) from the rear door of the Busley store over the 80-ft. length of the stockroom to the cooler, which means only brief exposure to room temperature.

This "complete refrigeration" is heavily emphasized by sales people to customers; incidentally.

The oversize cooler was installed both because Busley's expects a heavy volume of produce sales in the new super and to permit maintenance of large inventories due to the long haul from Denver to the suburban location. Fewer service trips will be required, Dudley pointed out.

An outstanding feature which brought much attention to the produce department at the grand opening in mid-December is a six-tree "orange-grove" which flanks the entrance.

Hauled by truck from Lakeland, Fla., the "grove" consists of fruit-bearing trees in barrel-sized containers of soil especially treated with chemicals to keep the citrus trees growing indefinitely.

A U-shaped wall of orange crates around the clump or orange trees sold a record volume of juice oranges during the first few weeks, according to Dudley.

Six electrically-operated checkstands of the revolving variety have demonstrated such efficiency that it hasn't been necessary to utilize produce department checkouts, the Busley management indicated.

Grocers Convention Set For Chicago June 12-16

CHICAGO — An "Early Birds Idea Exchange" and a produce packaging center will be two new features at the 56th annual convention of the National Association of Retail Grocers at Navy Pier, Chicago, June 12-16.

From 8:30 to 9:30 o'clock on weekday mornings, preceding the regular business session of the convention, successful store operators will gather in the meeting hall to discuss ideas that have proved particularly profitable for them.

Among those who will appear at the early sessions is Peter Reviglio, LaSalle, Ill., who will discuss "Advisory Service to Customers in a Self-Service Meat Department."

In the exhibit hall at Navy Pier, NARGUS will feature an actual retail food store package operation. Produce receiving, preparation, storage, and packaging areas will be reproduced as in the store.

Warren Elects Mayo V. P. of Manufacturing

ATLANTA—W. M. Mayo was elected vice president in charge of manufacturing of The Warren Co., Inc., here at the March meeting of the board of directors. He was also elected a director, it was announced by the company's president, J. D. Harris.

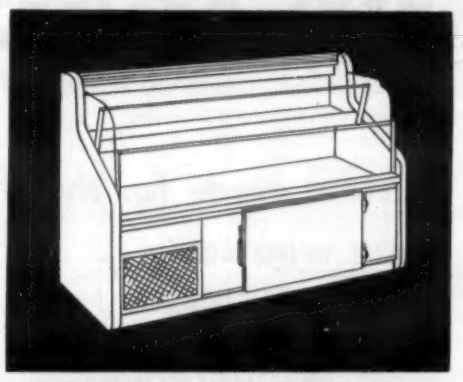
W. M. Mayo

Mayo joined the Warren firm immediately after completing his education in 1937. After a few months of "background" in the plant, he was assigned duties in the traffic department, later to serve as head of that department. For a number of years he was coordinator between the traffic department and production.

In 1950, Mayo was appointed production manager.

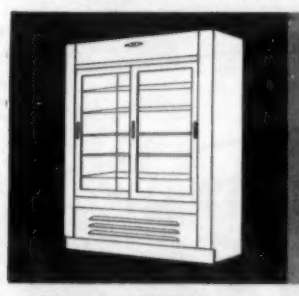
Are you losing sales?

complete your line . . . increase your profits . . . with these "special" models

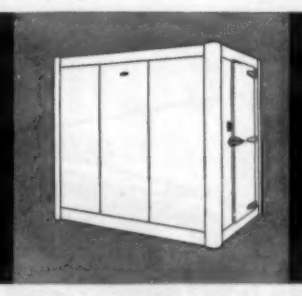


6 Ft. Self-Contained Case . . . for dairy products, meats and vegetables. 18 square feet of refrigerated display and 13 cubic feet of storage. Ready to plug in, excellent refrigeration. You can sell one of these a week!

If your present line lacks these items . . . if you need equipment for a "better" job . . . or custom-built units, call on SCHMIDT. Excellent quality, reasonably priced. Let us send you complete literature and details.

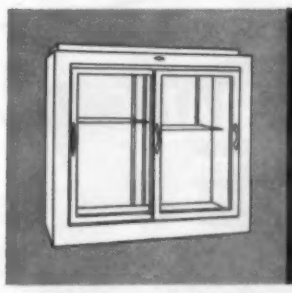


Self-Contained Sliding Door . . . excellent for baked goods, lunch rooms and small stores. Only 25" deep; stainless steel front. Large capacity.

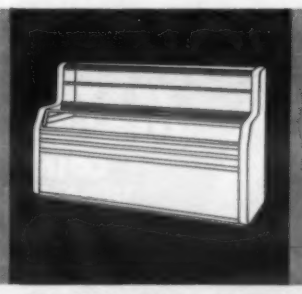


Walk-In Refrigerator . . . sectional construction, 7'-8" high with full head room. Exclusive "Filter-Flo" coil prevents mixed odors, eliminates cold blasts, maintains high humidity.

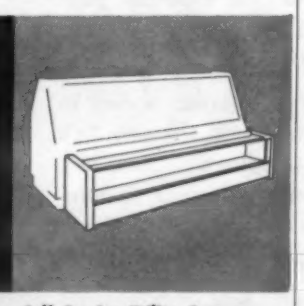
Sliding Door . . . increase the sale of and profit from bottled drinks. All around refrigerator for small store, variety of sizes. Extra large coils for fast cooling.



Floral Case . . . display and combination display-storage models, finished in colors or stainless steel. Exclusive refrigeration features protect flowers.



Frozen Food Cases . . . large capacity, beautiful design. Automatic defrost.



Self Service Utility Case . . . good for the small store, will increase sales of meats, dairy products; can be double-decked for vegetables.

COMPLETE LINE of conventional self service cases and storage freezers. WRITE FOR DETAILS.

THE C. SCHMIDT COMPANY

1712 JOHN STREET CINCINNATI 14, OHIO

THESCO

85th Anniversary

LIPMAN "CONVERTIBLE" AIR CONDITIONER MODEL LH-500

Installs easily — just select the top you need, lock it in place, and the Lipman Air Conditioner is ready for installation. Duct top or plenum top. Most commercial installations use plenum top and blower — duct top for home installation. Its small size and removable top feature make it unusually easy to deliver and set up. Priced lower than you'd expect — gives you more sales, more profits.

You Get Double Sales with the LIPMAN Line

You've got a big potential for this packaged air conditioner unit, and Lipman Ice Boy, in your territory. The air conditioning unit is ideal for motels, restaurants, bars, professional offices, beauty parlors, drug stores, etc. The Ice Boy sells to hotels, motels, resorts, hospitals, and institutions. In many instances you make a double sale in one stop, when you handle the Lipman line. Lipman Air Conditioning equipment starts at 2 h.p. size. For further information on either of these Lipman units, write Lipman Division, Yates-American, Beloit, Wisconsin.

LA-500

LIPMAN DIAL-A-SIZE ICE BOY MODEL LC-60

Delivers up to 4000 King Size Ice Tips per day — so big that only one ice tip per drink is needed. Stores 1725 ice tips — fast freezing cycle. Fits under bar or counter — only 37½" high, 48" long, and 26¾" deep. Features the Dial-a-size Control Unit which permits operator to select the size ice tip he wants. Four other models also available.

Lipman . . . a division of Yates-American

What Was New

At the Supermarket Show

INDIANA STATE SENATOR and supermarket operator Albert Wesselman (l.) examine a scaled down model of "UsAirco's" packaged system for air conditioning a supermarket with the help of Sally Barnes, hostess at the United States Air Conditioning Corp. booth. —KEY NO. E-534.—

CLUSTERED AROUND AMERICAN GAS MACHINE CO.'s new "Super Bar" combination ice cube maker, beverage cooler, dehumidifier, and locked liquor storage unit are (l. to r.) Mrs. Louis Fox of Washington, D. C.; Fred W. Whitcomb, midwest regional sales manager for the "Scotsman" line; Irving Feinstein and Abraham Feinstein of Springfield, Mass. KEY NO. E-537.

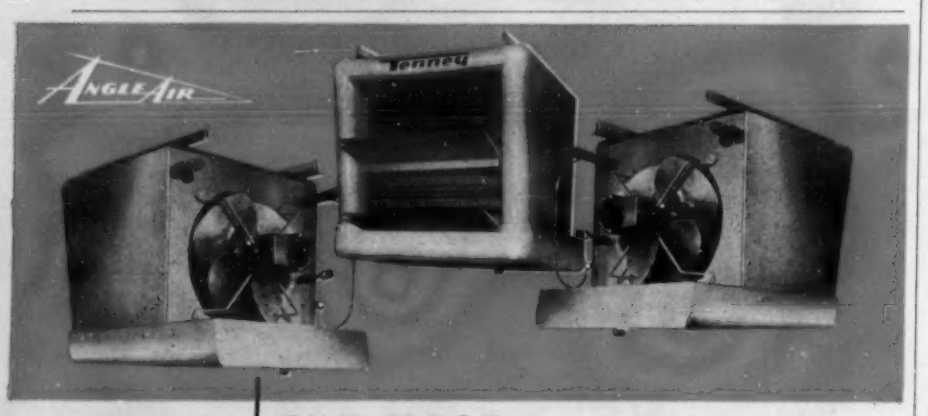
A DOUBLE-DECK FROZEN FOOD CASE, claimed to be an industry first, was unveiled at the Supermarket Institute exposition by Fogel Refrigerator Co. William Fogel, president (l.), and William H. Hall, Fogel representative in Michigan, pose with the new case that will hold 1,242 frozen food packages in an 8-ft. space. Forced air circulates over the second deck to keep temperatures low. KEY NO. E-539.

KING SIZE, DOUBLE ISLAND "Top-View" display case that can hold frozen foods on one side and meats or delicatessen on the other was premiered by Weber Showcase & Fixture Co., Inc. This is a single case available in 10-ft. lengths that can have both sides low temperature, both normal temperature, or one side low and the other normal. —KEY NO. E-535.—

RIGHT UP FRONT WHERE IT IS EASY TO SERVICE is the refrigeration system in Hussmann's LZ-8 frozen food or ice cream case. E. A. Niemeier, Jr., assistant sales promotion manager for Hussmann Refrigeration, Inc., indicates how the front concealing panel swings up to expose the system. KEY NO. E-538.

COLOR WAS THE DOMINANT THEME at the Sherer-Gillett Co. exhibit where J. S. Twist (l.), Sherer sales manager, explains to H. E. Hempstead, Sherer distributor in the Elgin, Ill. territory that the low front frozen foods case seen here is available in coral, green, blue, or yellow. KEY NO. E-5310.

THEY'RE SUPER STYLED FOR '60, Leon Prince (r.), general sales manager of Bally Case & Cooler Co., tells Abe Levine, president of a supermarket chain in Moncton, New Brunswick, Canada. To their right is Bally's new 11-ft. frozen food case with automatic defrosting. Behind them is a Bally 6-ft. double-deck dairy case. —KEY NO. E-536.—



THE MOST
REVOLUTIONARY
COOLING UNIT DESIGN
SINCE 670 A. D.

Not since a clever Japanese invented the split bamboo fan 1,285 years ago, has such a wholly new concept of efficient cooling appeared . . . the Tenney *ANGLE-AIR* unit coolers, open a completely new era in refrigeration equipment design.

Incorporated in these outstanding new units is the most significant combination of easy-to-install and easy-to-service features yet developed . . . the smooth ultra-modern appearance will sell you and your customers on sight . . . easily mounted with the simple as A-B-C Tenney "three step installation"* technique . . .

- suction line provision for simple expansion valve bulb location
- integral heat exchanger
- sensitive aluminum Facetized† fins mechanically bonded on electro-tin-plated copper tube
- adjustable air louvers
- vibration mounted motor for quiet operation

. . . a wide range of capacities: 4,000-40,000 B.T.U.–"Engineered" for *every* refrigeration job.

For top performance and increased profits specify and install new Tenney ANGLE-AIR unit coolers! Want complete information . . . write for bulletin 109-55 — today!

*EASY "THREE STEP INSTALLATION"

a. Hang template mounting — b. Slide unit into place on rail hangers — c. Connect refrigerant, power and drain lines

Tenney ENGINEERING, INC.
1076 SPRINGFIELD ROAD, UNION, N. J.
Plants: Union, N. J. and Baltimore, Md.
Engineers and Manufacturers of Refrigeration and Environmental Equipment

©114 †patented

The most powerful sales-clincher ever devised

custom made for the man who says . . . "I can't afford new refrigeration"

It's easy to convince your prospects they *need* new refrigeration . . . but it's another thing to sell them when they don't have the down payment and can't see how they can accumulate the monthly payments. That's where a METER-MATIC coin meter will step in and *close the sale.*

Your customer puts just a few quarters a day in the coin meter . . . right from the till the way he's accustomed to pay his other suppliers . . . and he's got his refrigeration, and you've got your customers. You can sell safely with no money down, except the installation charge.

METER-MATIC
COIN METER
REFRIGERATION SALES PLAN

GET THE COMPLETE STORY
- FULL DETAILS . . . Specifications, prices, etc.
- METER PLAN BROCHURE . . . to help you sell
- FREE SELF-MAILERS . . . for mailing to prospects

MAIL THIS COUPON NOW!

INTERNATIONAL REGISTER COMPANY
2622 W. Washington Blvd., Chicago 12, Illinois

Please send me Meter-Matic Sales Kit No. 55 Rm supply of 25 self-mailers for mailing to my prospects. Be sure to include a free

Company _____
My Name _____
Address _____
City _____ Zone _____ State _____

Commercial Refrigeration

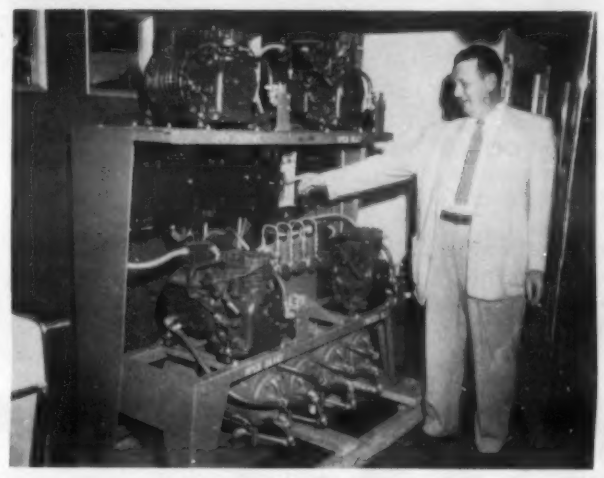
FIRST SHOWING of Frigidaire's new "Zero Super Server" ice cream case attracts John Kulah (c.) and Bert Maher (r.) of Henry J. Eavey, Inc., of Richmond, Ind. R. Woodward, national accounts salesman for Frigidaire, explains that exclusive "Flowing Cold" refrigeration keeps all packages frozen hard. KEY NO. E-5311.

GETTING THEIR FIRST LOOK at McCray's new island frozen food and ice cream display case that won't be available until late May are R. E. Miller and P. M. Riesor of Riesor & Riesor Equipment Co., McCray distributor in Bristol, Tenn.-Va. Featuring glass side rails, the case will be available in 8 and 11-ft. lengths.
——KEY NO. E-5312——

READY TO DEMONSTRATE "Reco-Fab Frosti-Vault" aluminum metalply sectional freezers and coolers for supermarket operators and warehousemen are (l. to r.) Murray Weissman, vice president of Reco Sales & Engineering Corp., and company representatives Stayton Todd, Walter Voll, and Bill Hall.
——KEY NO. E-5313——

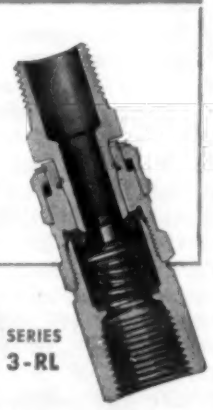
For further information on products pictured on these pages please refer to key numbers and use Information Center Blank on page 21. Additional pictures from the Supermarket Show will appear in a future issue.

STANDING BESIDE HIS FIRM's brand new island frozen food display case is John Romadke, president of Federal Refrigerator Mfg. Co. In the background is Federal's new triple-deck dairy case with all three shelves refrigerated. KEY NO. E-5314.



SCOTCH FOURSOME MULTIPLE condensing unit assembly was introduced at the SMI show by Tyler Refrigeration Corp. Roger Sisson, east central division manager, explains that the rack is prewired, each compressor has its own control panel, and only a single plumbing connection is needed.
—KEY NO. E-5315—

Everything You Want
in a Quick-Connective Pneumatic Coupling



HANSEN SERIES 3-RL
RING-LOCK COUPLING

On any job requiring ¾" to ⅛" connections—from the air line to the air tool—this single size Hansen Ring-Lock Coupling—with completely interchangeable Sockets and Plugs—does it all—makes it easy to keep stock of parts in balance—holds inventories to a minimum.

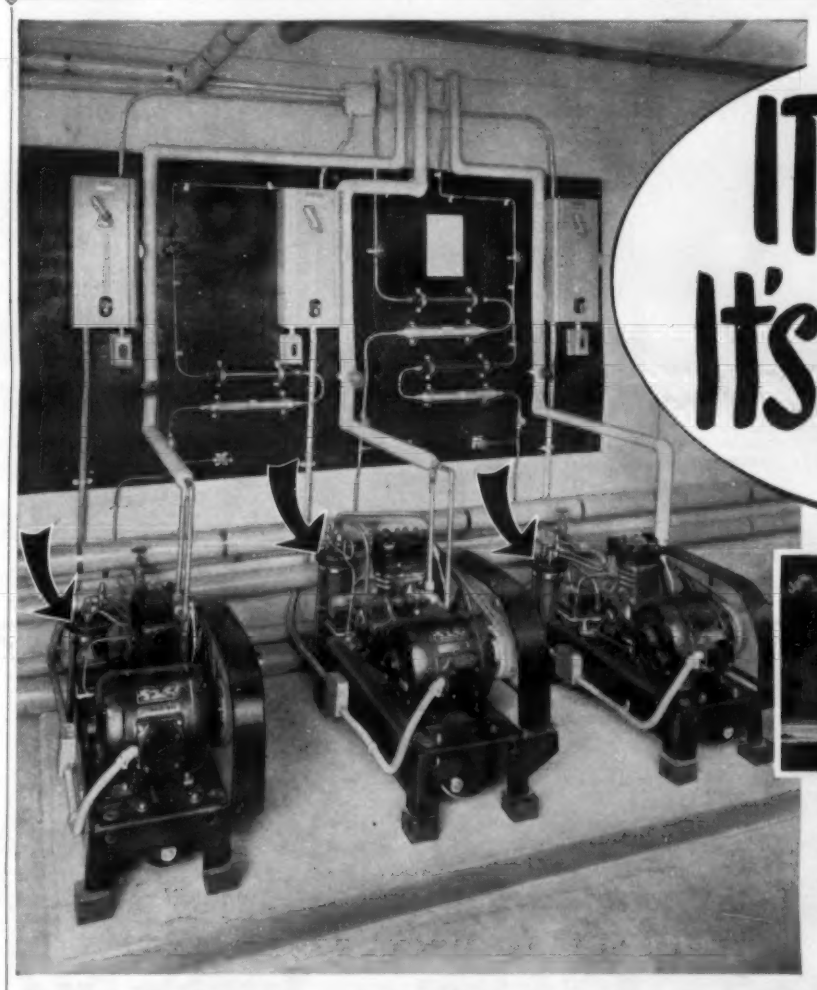
To connect, you merely push the Plug into Socket. To disconnect, just turn the sleeve. When Coupling is connected, a locking ring in Socket enters groove in Plug, provides positive lock and insures tight fit. Sockets with aluminum bodies are available for use with small hand-operated air tools.

- Smaller.
- Lighter.
- Effectively handles more volume than any other coupling of equal dimensions.
- Handles any job with fittings from ¾" to ⅛", from the air line to the air tool.
- All Series 3-RL Sockets and Plugs are interchangeable — reduces stock inventory to a minimum.
- One-way shut-off—for pneumatic service applications.
- Positive locking.
- Equipped with automatic sleeve lock.

Relative size of ordinary coupling required for effective handling of same volume

Write for Descriptive Literature

SINCE 1915 QUICK CONNECTIVE FLUID LINE COUPLINGS
THE HANSEN MANUFACTURING COMPANY
4031 WEST 150th STREET • CLEVELAND 11, OHIO



IT's NEW! It's modern!

One of the most modern schools in America is the new Clara Bryant Junior High School in Dearborn, Michigan.
Three condensing units supply refrigeration needs for the school's cafeteria and drinking water fountains throughout the building.

...and TEMPRITE Oil Separators are on the job!

★ Temprite Oil Separators keep oil in the compressor and away from the evaporator and condenser walls.
★ Oil-free coils permit the refrigerant to boil at its true boiling point in evaporator, condensing at the proper temperature in the condenser.
★ Lower temperatures easily reached and compressor operating time held to a minimum. Power and water consumption is held to a minimum.
★ Compressor crank case oil level remains constant, eliminating danger of scored compressor parts.

Temprite PRODUCTS CORPORATION ★ BIRMINGHAM, MICHIGAN

TEMPRITE PRODUCTS CORP.
P.O. Box 72-A, Birmingham, Michigan
☐ Please send me complete data on Temprite Oil Separators
☐ Ask your representative to call
Name_____
Address_____ Zone_____
City_____ State_____

Based on On-the-Job Training

Army Initiates Classes on Basic Principle Of Air Conditioning and Refrigeration

NEW YORK CITY—Initiating a precedent in the U. S. Army reserve program, a series of lectures and study classes on the basic principles of air conditioning and refrigeration has been launched for the 213th Company (Refrigeration), of the 300th Quartermaster Battalion, culminating with the unit's active duty session this summer.

The courses, based on actual on-the-job training, are being conducted by the company's commander, 1st Lieut. Raymond Haas, who, in civilian life, is president of Glo-Cold Co., an authorized Carrier Corp. service organization.

In addition to Lieut. Haas, who was the initial lecturer, the refrigeration company's reserves will hear executives and engineers of Carrier and representatives of Carrier's New York distributor, Carleton-Stuart Co.

Other highlights of the study, to be held every week for three evening sessions, include presentation of training films produced by Carrier.

Refrigerating companies were in operation during World War II. The local group based in the Army building at 529 W. 42nd St., however, was activated by the New York Military District authority last September.

In service, such companies are responsible for the installation, operation, and maintenance of all air conditioning and refrigeration equipment from single room window units to central apparatus used for hospitals and other large buildings and from machines designed to chill beverages to multipurpose functions such as the long-term storage of meats, produce, pharmaceuticals, and other products.

The current courses are being held in the Glo-Cold offices at 650 Hinsdale St., Brooklyn, and will terminate when the army unit, comprised of some 18 men and four officers from all over the metropolitan area, goes into summer training Aug. 21 for 15 days at Camp Lee, Va.

Lieut. Haas points out that "the cooperation of Carrier Corp. with the 213th Quartermaster Company illustrates the importance of private industry to the military."

Among the lecturers to instruct the army reserve company will be Louis Patalita, New York district service manager for Carrier, and Anton Jacoby, service manager for Carleton-Stuart.

Mueller Brass Sales Show 30% Increase

PORT HURON, Mich.—A 30% increase in sales so far this year as compared with the similar period last year was reported by F. L. Riggin, Sr., president of the Mueller Brass Co. here.

Speaking at the company's annual meeting, Riggin was optimistic for the outlook for the rest of the firm's fiscal year.

Sales for the three months ending Feb. 28 were $14,991,011 as compared with $11,474,440 in the same period last year.

Riggin said that greatest gains so far this year were recorded for the company's trade-marked products, including valves, dehydrators, fittings, and accessories.

Although increased metal costs had an adverse effect on profit for the first quarter's operations, Riggin explained that selling prices have now been adjusted to more nearly reflect these greater costs.

All principal officers of the company were re-elected by the board of directors. In addition, the board created three new offices.

It elected A. C. Dappert, formerly general sales manager, as vice president in charge of sales; Frank M, Levy, formerly director of research, as vice president in charge of research; and Ernest Schleusener, formerly works manager, as vice president in charge of manufacturing.

Emerson Electric Names O'Neill Vice President, And Gen. Sales Manager

ST. LOUIS—Edward L. O'Neill has been elected vice president and general sales manager of the Emerson Electric Mfg. Co., it was announced recently by W. R. Persons, Emerson president. Several other elections and appointments and one retirement also were announced.

E. L. O'Neill

As general sales manager, O'Neill will direct Emerson's sales, sales promotions, advertising, and public relations. He had been assistant to the president since joining the company last July.

He was export manager and assistant to the president for Trailmobile, Inc., in New York City before coming to Emerson, and also served as director of Societe de Remorques Trailor of Paris and of Trailmobile de Mexico of Mexico City. Others to assume new duties are:

R. E. Otto, elected vice president, motors. Otto, who has been with Emerson since 1914, will serve in executive liaison and as consultant on sales policy.

Gilbert F. Craig, appointed assistant vice president, industrial relations. With Emerson since 1949, Craig will now be responsible for the company's personnel program.

William L. Davis, Jr., appointed assistant vice president, engineering. He will be responsible for armament engineering.

He has been with the company since 1942.

The retirement announced by Persons was that of John A. Driy, who retired from active service as executive vice president on Dec. 31, 1954. Driy had held the position since May, 1953.

Also announced were the reelection of W. S. Snead, chairman of the board of directors; W. R. Persons, president; R. E. Petering, vice president and treasurer; H. C. Miller, vice president in charge of operations; R. H. McRoberts, secretary; and B. W. Jackson, comptroller and assistant secretary.

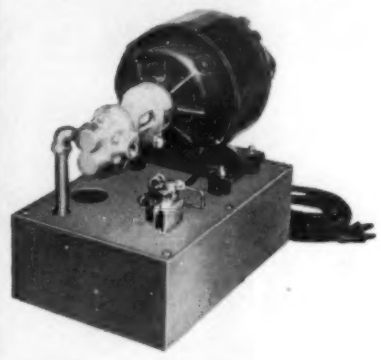
New Wholesale Firm Formed In Phoenix

PHOENIX, Ariz.—A wholesale firm to distribute Westinghouse air conditioning units has been formed here with Walter A. Biddle as manager and E. P. Hennesy as sales engineer.

Known as Fresco Distributing Co., the firm is located at 21 E. Durango.

Affiliated dealers include Lynn Sheet Metal Co.; Saffell Air Conditioning Co.; and Tempe Appliance & Furniture Co.; True Air Conditioning Co.; and Valley Sheet Metal Co.; as well as dealers in Tucson, Coolidge, Yuma, and Buckeye.

eliminate pump-to-drain disposal line with



NEW high-pressure Condensate DISPOSAL UNIT (MODEL CCC)

- ⅓ H.P. MOTOR — pumps against 100 lbs. pressure
- AUTOMATIC OPERATION mercury float switch
- HOT-DIPPED GALVANIZED TANK

No need to run separate disposal line. Water is pumped directly into the condenser water line, through check valve furnished.

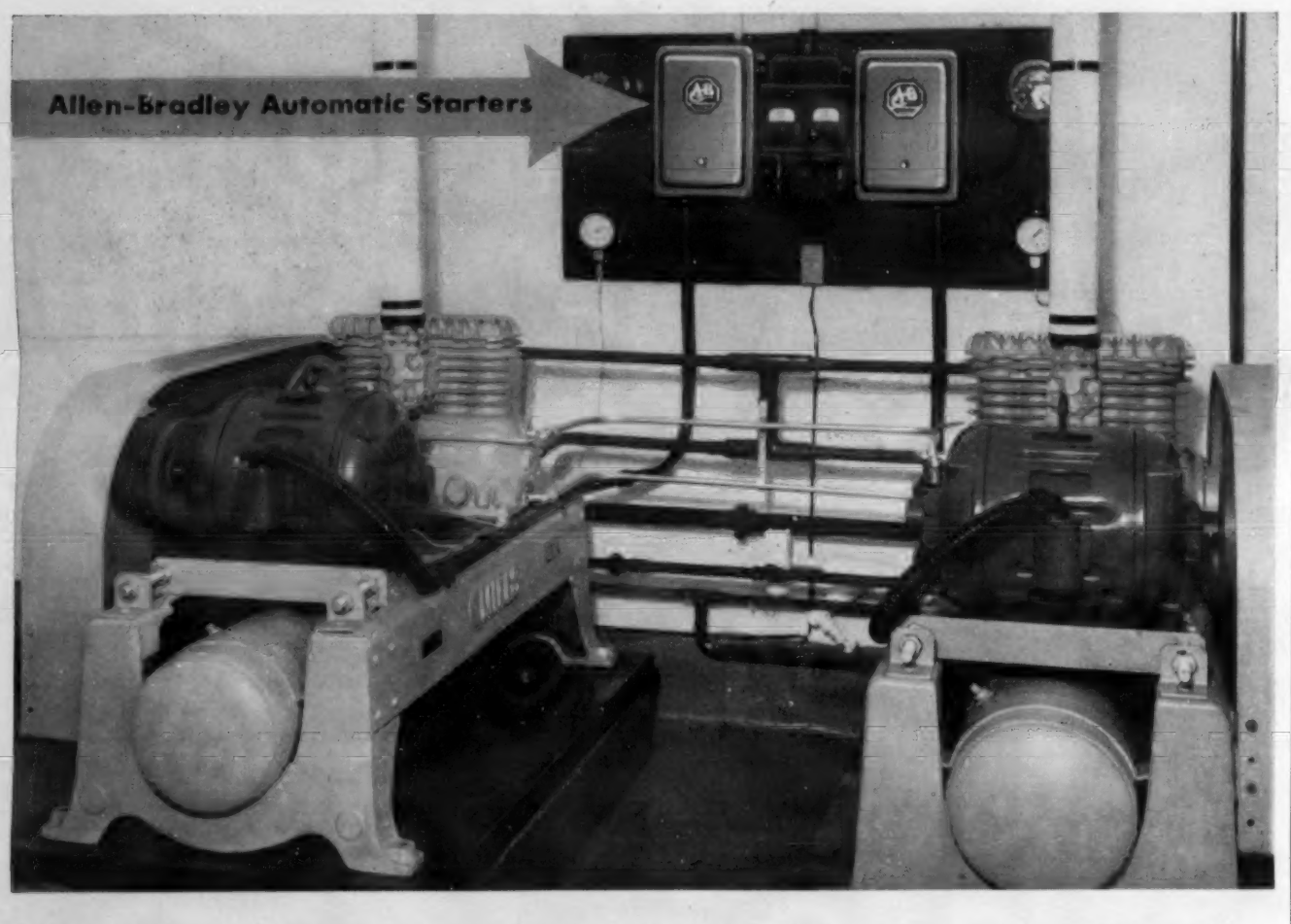
$74.50 (F.O.B. Dallas) — to contractors — or order through your jobber

for full information — write or call

PASHCRAFT CO.
MECHANICAL EQUIPMENT
5643 Dyer Street • Dallas, Texas

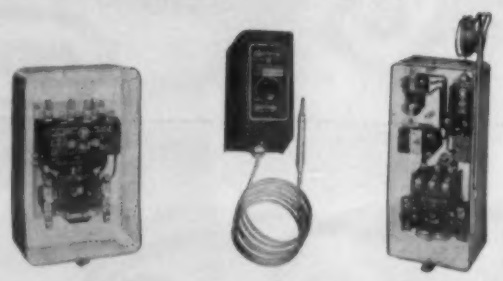
JUST ASK US!

Turn to "What's New" Page for useful information on new products. Use Key No. for fastest service.



REFRIGERATION MOTOR CONTROLS that are Trouble Free

TYPICAL ALLEN-BRADLEY REFRIGERATION CONTROLS


Bulletin 709 Automatic Solenoid Starter

Temperature Control

Special Refrigeration Control Panel

Why are Allen-Bradley automatic starters so popular for refrigeration and air-conditioning service?... Because they are so trouble free and dependable. Why are they trouble free? Because all A-B starters have only ONE moving part. No pivots, pins, or bearings to corrode or stick ... no jumpers to break. You install them ... and forget them! No contact maintenance ... Allen-Bradley cadmium silver alloy contacts never need cleaning, filing, or dressing. A time-saving and money-saving "plus value."

Dependable overload relays ... Allen-Bradley thermal relays are accurate and remain accurate "on the job" ... even after years and years of service.

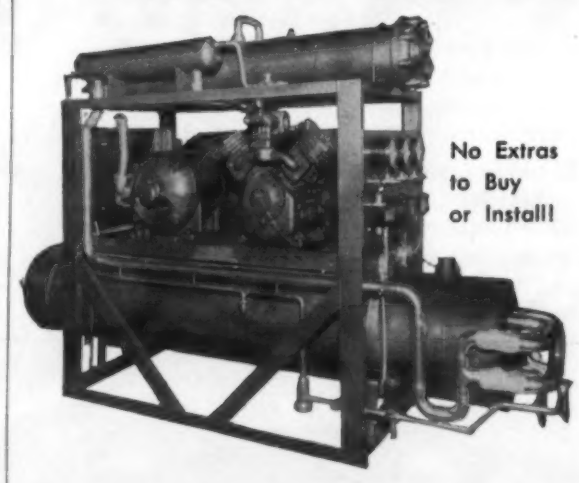
The Allen-Bradley trademark stands for "Quality" in motor control. Remember to specify Allen-Bradley—over the years you'll be money ahead!

Allen-Bradley Co.
1313 S. First St., Milwaukee 4, Wis.
In Canada—Allen-Bradley Canada Limited, Galt, Ont.

A-B Quality

ALLEN-BRADLEY
SOLENOID MOTOR CONTROL
QUALITY

SCHNACKE *Thermatrol* WATER CHILLERS



No Extras to Buy or Install!

—completely packaged line ... 10 through 60 tons!

Eliminate Costly Field Assembly!

All components in one low-cost single unit—motor, starter, full Freon charge, Thermatrol capacity regulator—everything! Thermatrol package chillers are available in sizes from 10 to 60 tons, at 35° and 40° in standard models. The "S" line offers specification design to meet any requirement, easily selected to fit the job. Ideal for multi-zone construction and year around systems. One order does the job! Write for engineering data.

1105 Governor St. **SCHNACKE, INC.** Evansville, Ind.

Aimed at Putting 'Sell' Back Into Salesmanship

Carrier Sales Training Program Makes Available Company Know-How To 3,500 Dealer Representatives In Three Months

SYRACUSE, N. Y. — Carrier Corp.'s comprehensive packaged sales training program was described recently by John M. Bickel, vice president of the company's Unitary Equipment Div., as an "overwhelming success."

Designed to put the "sell" back in dealer salesmanship and to make Carrier's more than half-century of know-how available to all its retail outlets, the program has provided individual training for more than 3,500 dealer representatives within the last three months, Bickel revealed.

The Carrier executive said the program "represents a planned and positive approach to problems and pressures dealers and distributors must solve and to the new air conditioning markets now opening up swiftly."

5-Fold Goal

The immediate goals of Carrier's new training program, Bickel explained, are five-fold:

1. To help newly-established Carrier dealers enter the field from such lines as heating, plumbing, and sheet metal by giving them a complete education in commercial and residential air conditioning in a minimum of time.
2. By increasing product familiarity and technical know-how, to enable Carrier dealers to estimate and bid on installations with a greater degree of self-sufficiency.
3. To benefit the customer through satisfactory fulfillment and more efficient dealer servicing of his air conditioning needs.
4. To add new channels of distribution for the company's expanded product lines by attracting reputable dealers through the obvious benefits of such a training program.
5. To insure that Carrier distributors are equipped with complete engineering, product, and sales information so that they can help dealers find and sell prospects, as well as engineer, install, and service.

Full-Time Teaching Program

In preparation for this ambitious teaching project, the company's Unitary Equipment Div. set up a new sales training department in June of 1954 with a full-time training director and staff responsible for planning and production of sales training materials and programs for all lines of dealer equipment.

To tackle the "almost impossible" job of teaching more than 3,500 dealers in the short space of 90 days, Carrier's training director, Theodore Skoglund, evolved a "unique" plan of operation, it was pointed out.

Company experts first trained distributors who in turn passed their knowledge along to dealers in their territory. This necessitated supplying distributors with complete packages containing every needed training tool, down to correct answers for a final quiz.

Initial Group on 'Weathermaker'

The initial packaged program, a completely new residential "Weathermaker" sales training course, was made available to company distributors last Oct. 25 and met with instant success, the company said.

"It consisted of a basic, practical review of refrigeration fundamentals, load estimating, selection of equipment for a particular job, duct layout, servicing, and the latest sales techniques in home air conditioning," Carrier noted.

"Each of six lessons in the package ran two hours long, supported by a sound-slide film. Copies of Carrier's 'meeting leader's guide' told distributors exactly what to do and when. Distributors added information of purely a local nature. Students were given loose-leaf textbooks which served them as permanent reference books upon completion of the course."

Furnishes Residential Know-How

According to Carrier executives, the company's residential training program has enabled a substantial number of dealers whose experience to date has been confined mainly to warm air or wet heat systems or to commercial air conditioning practices, as well as contractors, appliance firms, and salesmen with no previous experience, to move directly into the growing home air conditioning field on a volume basis.

"An enthusiastic response to the new residential Weathermaker sales training course dispelled any doubts as to its success," Carrier said. "Veteran Carrier distributors swamped the company with orders long before the program was officially announced.

"Typical of the response was that of Montgomery Engineering, Jersey City, N. J. The firm wired an order for films and student kits in late September. By Nov. 9, the first of six weekly evening sessions got under way.

"Although Montgomery tried to limit its first class to 30 students, its dealers were so insistent the Carrier distributor had to open with 35—absolute capacity for its meeting room. A second dealer class has now taken the course and the company contemplated putting on a third class."

Late in December, a second sales training program was introduced, designed to help Self-Contained Weathermaker salesmen. Comprising four two-hour lessons, the course featured Carrier's Weathermaker handbook, a brand new reference tool. The pocket-size loose-leaf reference book "provides the type of information salesmen need when face-to-face with a prospect," the company said.

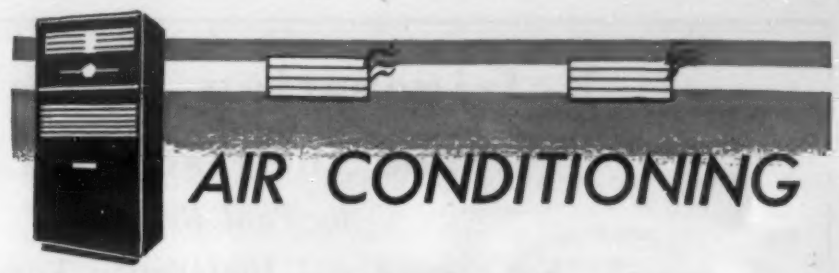
A follow-up sales training package on room air conditioners was distributed by Carrier in January. Also scheduled was a complete training course for the company's "Icemaker" salesmen.

Applied Equipment To Come

While training plans for applied or built-up equipment are now being finalized, a series of two-day training sessions for distributor personnel was held during January and February with a team of factory experts making the coast-to-coast trek.

As a prime step in emphasizing the fundamentals of basic selling, Carrier is also making available sound slide films, motion pictures, and books from its circulating library.

Future plans call for continued emphasis on sales training by all members of the Carrier organization. These activities will range from classes at the factory to field schools and on-the-job sessions.



Roth, Carnahan Take Airtemp Posts

DAYTON — Two new appointments within the sales division of Chrysler Airtemp have been announced by J. F. Knoff, vice president in charge of sales.

H. M. Carnahan

H. Melvin Carnahan has been named to the newly - created post of assistant sales manager in charge of residential air conditioning. Martin L. Roth joins the staff of the sales vice president to handle special builder assignments.

M. L. Roth

Carnahan, until his recent resignation, was vice president of sales of the Sunbeam Air Conditioner Div. of American Standard Co.

Carnahan joined American Standard in 1935 following his graduation from the University of Pittsburgh. Prior to being named to the Sunbeam vice presidency in 1953, he was affiliated with the firm's heating and air conditioning sales division in various managerial capacities.

With a tour of duty including 42 months in the Pacific area, he served in the U. S. Army from 1941 to 1946, achieving the rank of captain. Following the war he returned to American Standard, devoting his attention to home heating and air conditioning.

Roth, prior to joining Airtemp recently, was affiliated with The Pekin Wood Products Co. of Helena, Ark., a former Chrysler Corp. subsidiary. He had served as the assistant to the president of Pekin Wood Products for the past several years.

Roth is a graduate of Southeast Missouri State college. During World War II he served as a major in the U. S. Army the announcement said.

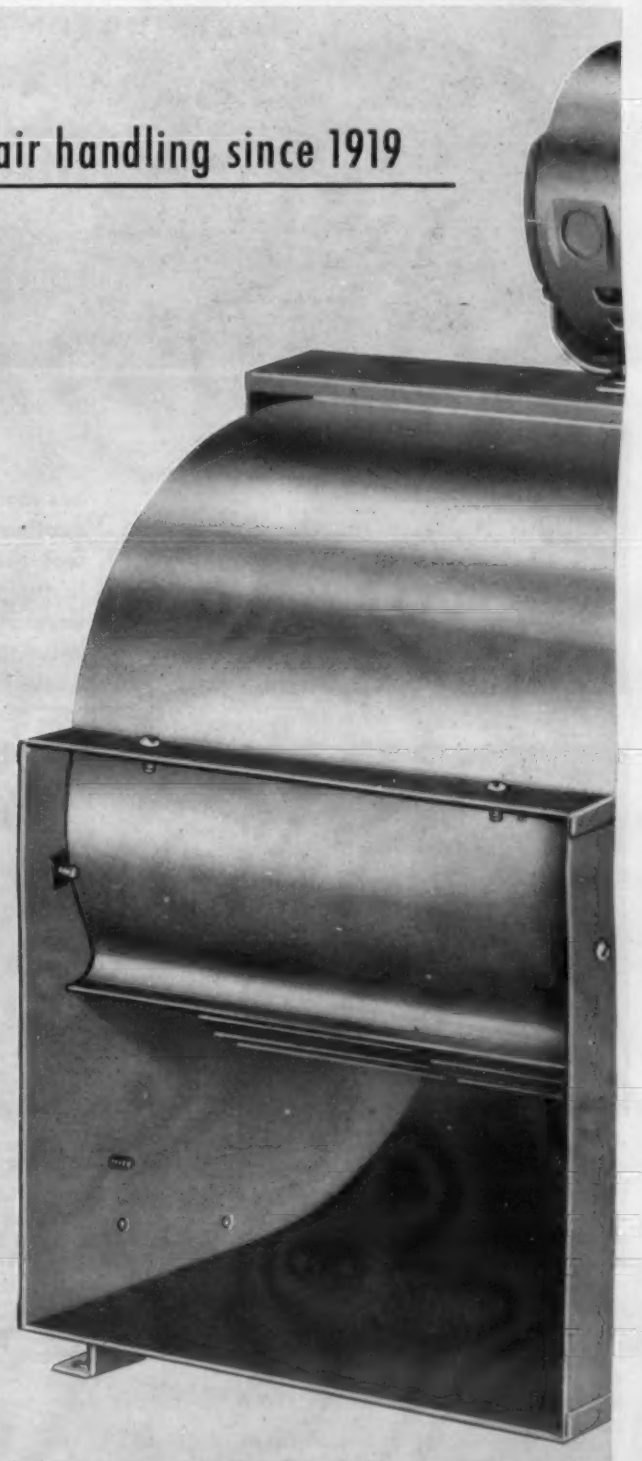
Brundage ...for better air handling since 1919

Quiet Please...

Quiet is the word for Brundage Blowers — and the key to happy customers who don't even want to know they have a blower.

Add the practically service-free performance of extra-strong construction and you have a sure hit with your dealers too.

Whether you manufacture heating or cooling equipment, you can be sure of the quality to match your finest product when you choose Brundage . . . quality proven since 1919.



ASK FOR SAMPLE BLOWERS TO PROVE BRUNDAGE VALUE IN YOUR OWN LAB.

WRITE FOR FREE LITERATURE
PRICES ON REQUEST

RELIABLE SERVICE — WHEN YOU NEED IT!

THE Brundage COMPANY
508 N. PARK STREET KALAMAZOO, MICH.
Phone 2-0251

The only ALL NEW Water Saver on today's Market

QT COOLING TOWER

Cut away view of 5 Ton Tower. Manufactured in 3 and 5 ton sizes.

For use with all makes of Water Cooled air conditioners.
Outdoor installation—safe for children or pets.
Low height and vertical air discharge.
Pleasing green FIBERGLASS CABINET AND SUMP PAN. (No paint ever needed).
Clear heart Redwood deck.
WATER TURBINE driven fan—No electrical connection to the QT.

ORDER NOW — IN STOCK

KENNARD CORPORATION
1825 S. HANLEY RD. • ST. LOUIS 17, MO.

Refrigeration Problems

and their solution

by Paul Reed

For Service and Installation Engineers

Paul Reed

Blood Plasma (2)

DRY BLOOD PLASMA

Prior to World War II, some experimental work had been done toward further processing the frozen plasma by reducing it to a dry powder. In that form, it does not require refrigeration and can therefore be carried out into advance combat positions. There it is re-mixed with distilled water to again become liquid plasma and administered to the wounded on the spot, to replace blood lost from wounds.

Dr. Max Strumia of Bryn Mawr hospital and the University of Pennsylvania, already famous for his work with blood plasma, undertook to perfect the plasma desiccation process, and it was largely through his developments that dried blood plasma was made available to the armed forces of the United States during World War II, resulting in the saving of countless lives of wounded.

Foods, such as potatoes, eggs, etc., had been dried to power form and then restored to their original state by the addition of water. (Thousands of GI's and gobs will probably make vigorous objection to the expression "restored to their original state.") Although perhaps not highly palatable, dried foods were nevertheless successful from a standpoint of nutrition, transportation, and independence from refrigerated storage.

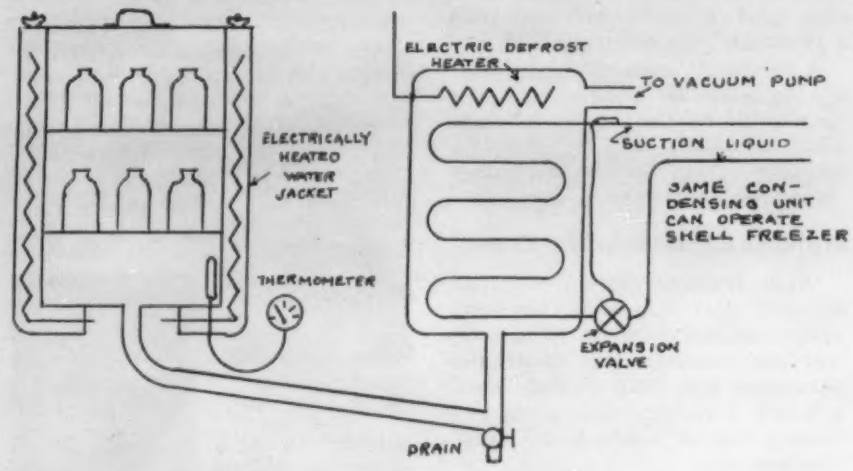


DIAGRAM of sublimation process used to remove water content from frozen blood.

Drying of foods is a much simpler matter than drying of blood plasma. The foods can be heated to a high temperature to facilitate the drying process. Plasma must be dried without heating it above about 140° F. Higher temperatures destroy the value of the plasma and render it unfit for use.

SUBLIMATION UNDER VACUUM

As described last week, the blood plasma is first frozen, and then reduced to a dry, flaky powder by removing the water from the frozen plasma.

We are all familiar with what happens when wet clothes are hung outside in very cold weather. The water in the clothes first freezes, leaving the clothes hard and stiff. If left out in the cold, the ice gradually disappears, leaving the clothes dry and soft.

The ice in the clothes turns directly into water vapor, or "sublimes," and the process is known as "sublimation." Ice gradually disappears from sidewalks, even though the temperature has stayed well below freezing. Dry ice gets its name from the fact that, even at above 32° F., it does not melt into a liquid but sublimes directly to a vapor.

The principle of sublimation is taken advantage of to remove the water content from frozen plasma, and thus dry it, without having to heat to a high temperature. It is done by a variation of the "heat and vacuum" process so familiar to refrigeration men.

When we dry refrigeration equipment by the heat and vacuum method, we raise the temperature of the equipment to two or three hundred degrees, thus raising the vapor pressure of the water in the equipment, and then we remove this vapor by means of a vacuum pump.

When water boils or evaporates, removal of the latent heat of vaporization is required to change it from a liquid to a vapor. When ice melts, the latent heat of fusion is required to change the ice to water. When ice sublimes, the latent heat of sublimation must be supplied to change the ice to water vapor.

WATER REMOVED FROM PLASMA AS VAPOR

In removing the water from frozen plasma, the latent heat of sublimation only, is supplied to the plasma, so that it does not get warm enough to melt. Therefore, the water in the frozen plasma is removed as a vapor, leaving only the dry solids of the plasma.

To make this process of sublimation of the frozen plasma practical, it must be speeded up by keeping the frozen plasma under a deep vacuum of about 29.9 in. of mercury, which is about .01 p.s.i. absolute pressure.

MOISTURE FROZEN ON COLD COIL

To protect the vacuum pump, it is desirable to remove most of the moisture (water vapor) that comes from the frozen plasma, before it gets to the vacuum pump and gets into its oil seal. Several methods have been tried, including the use of desiccants, but the best and most practical method, and the one commonly used in blood plasma drying, is to remove the moisture by means of a cold coil on which the moisture freezes.

The bottles of frozen plasma, with their sealing stoppers removed, are placed in a drying chamber. This chamber is of metal and built strong enough to withstand atmospheric pressure without, and the deep vacuum within. It is fitted with a gasketed cover, secured by thumbscrews.

It is surrounded by an electrically heated water jacket, which supplies the heat of sublimation to the plasma in the bottles inside. The temperature of the jacket is maintained at about 120° F.

Connected to the bottom of the drying chamber, by a large tube, is the "condenser" which contains the cold coil on which is condensed and frozen the water vapor removed from the frozen plasma. The inlet of the vacuum pump is connected

(Continued on next page)

WORTHINGTON DEALERS ARE SUCCESSFUL DEALERS!

"Signing up with Worthington was a good move"

. . . says Richard H. Catlett, President of the Catlett-Johnson Corporation, Virginia's leading air conditioning and refrigeration dealers. Mr. Catlett goes on: "In the eight years we've had the Worthington franchise, our dollar volume has more than doubled. Previously, we were identified with another nationally advertised brand. The decision to change was not easy, but the results have been very gratifying. We've expanded our business as a result of Worthington's unrestricted franchise and complete range of products. And Worthington is one outfit that *never* competes with its dealers."

RALPH E. ORCUTT, CATLETT-JOHNSON'S SALES MANAGER SAYS: "Worthington promotion material is second to none — it helps us do a bang-up job. I'm enthusiastic about the way the Worthington people — and the sales aids they create — help us locate prospects . . . and turn them into sales. Worthington's staff of merchandising experts have given us a big hand in the development of a sound dealer program. And Worthington's national reputation helps a lot."

JOHN C. HILDEBRAND, JR., VICE PRESIDENT & CHIEF ENGINEER, SAYS: "The fact that I can rely on Worthington's published engineering data and ratings saves me many hours of engineering time. And Worthington's complete line of equipment allows me to select the units I know will be best for the job. Reciprocating and central station systems, year-round residential units, packaged air conditioners, add-ons — Worthington's got *everything!*"

J. TABB MEYER, JR., OPERATIONS MANAGER, SAYS: "Worthington units are extremely compact, well-designed, and easy to install almost anywhere. You can see the equipment is built with the serviceman in mind — easy accessibility cuts down our maintenance and service time. And Worthington's million-dollar compressor just can't be beat for day-in, day-out reliability. On the off-chance that something may go wrong, Worthington's five-year warranty takes care of it."

Catlett-Johnson's story — like so many others we've received — adds up to this: Worthington dealers are *successful* dealers. And there are plenty more reasons why. Lots of them are mentioned in Worthington's new monthly publication, "The Merchandiser". Write for it today. Worthington Corporation, Air Conditioning and Refrigeration Division, Section A.5.37-AC, Harrison, N.J. A.5.37

WORTHINGTON

THE BEST FRANCHISE . . . THE MOST COMPLETE LINE

Ice-Cel® UNITS

AIR CONDITIONING FOR HEAVY LOADS OF SHORT DURATION

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Rockwood, Tennessee

Many of America's finest churches depend on DOLE *Ice-Cels* to provide the ultimate in air conditioned comfort for their congregation. Initial investment is small and operating costs are low.

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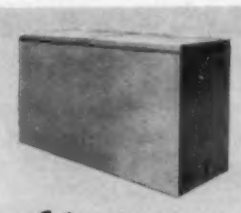
St. Louis, Missouri

The compact design of the *Ice-Cel* Unit permits easy installation. Charging of the *Ice-Cel* can be accomplished at any time. A small condensing unit can operate all day and most of the night if desired.



Ice-Cels are applicable for churches, offices, stores, theaters, auditoriums, cafeterias and mortuaries . . . Write for *"Ice-Cels in Action"* — a pictorial brochure — or *Engineering Catalog BAE.*

DOLE REFRIGERATING COMPANY
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CHICAGO 30, ILLINOIS
103 PARK AVENUE, NEW YORK 17, N.Y.
In Canada:
Dole Refrigerating Products Limited
44 Elgin Street, Brantford, Ontario

Maximum Refrigeration Efficiency
DOLE
MANUFACTURERS OF
THE Cel LINE

Blood Plasma--

(Continued from preceding page)
to the top of this "condenser" chamber; so the moisture must pass over the cold coil.

PLASMA STAYS IN SAME BOTTLE

The frozen plasma is dried in batches; a batch is put in the drying chamber and the cover secured. Then the refrigerating unit is turned on and the "condenser" coil brought down to about -22° F. before the vacuum pump is started. About 2 to 4 hours are required.

The vacuum pump is then stopped, the vacuum broken, the cover of the drying chamber is taken off and the bottles of dried plasma removed. An electric heater in the condenser chamber is turned on and the condenser coil defrosted.

The dried plasma is now a golden, flaky powder, with somewhat the appearance of soap powder. Its moisture content is less than 1%.

WATER SUPPLIED WITH DRIED PLASMA

A deep vacuum is drawn on the bottle, it is sealed and placed in a metal can with another 400 cc bottle containing 300 cc of sterile, distilled water, and the tubing, needles, etc., for giving a transfusion under emergency conditions.

This same freeze-dry process is also being used in the preparation of bacteriologicals and other desiccated materials to which high temperatures would be harmful. It has possibilities for other uses.

In the preparation of this article the author has drawn freely on Dr. Strumia's chapter on the Preparation of Blood Plasma in the ASRE Data Book and recalls with pleasure his own contacts with Dr. Strumia, the Precision Scientific Co., Messrs. A. M. Schmitz and C. L. Olin of Servel, and several blood plasma processing stations, in the development and refinement of equipment for the freezing and drying of blood plasma in the early days of World War II.

Cheyenne Ordinance--

(Concluded from Page 1, Col. 3)
gals. of water per month shall be provided with an approved water conservation device on or before Oct. 1, 1955."

Another provision requires that effective shutoff devices and regulative valves must be installed on cooling systems of a capacity of less than 2 tons in order to control the water flow to the minimum requirement at any load.

Persons desiring to install any such system will be required to obtain approval of the equipment and an installation permit from the city engineer.

The measure provides a $100 maximum penalty on conviction of violation.

JORDON Upright Freezer Model JD.

Jordon Freezers--

(Concluded from Page 1, Col. 5)
Highlights of the line include more freezer storage space in less floor space, streamlining of the exterior and interior of the cabinets, exclusive "Seal-O-Matic" doors, and virtually seam-free leather grained and anodyzed aluminum teriors, according to Jordon.

In showing the freezer line at a press luncheon, Frank Fogel, president, said the new models were on the design boards nearly two years and were tested for a year under virtually every conceivable condition such appliances might meet in the home, restaurant, institution, or on the farm.

Fogel also announced that Jordon's 1954 "Duplex" combination refrigerator-freezer, with the latter compartment on the bottom, is being completely re-designed and will be introduced later in the year in sizes to fit any kitchen.

The 1954 model included a normal temperature compartment on the top comprising about 8½ cu. ft. of storage space and a 10½-cu. ft. freezer compartment on the bottom, both operating on the same compressor unit but with separate controls.

Among announced features of the new Jordon line of upright home freezers are:

A full storage door for fruit concentrate cans and other small packages, and increased door rack storage.

A removable and adjustable shelf inside the main cabinet to make room for extra-large packages.

All cabinets in the new line are trimmed in gold, chrome, and blue.

Model JD-23 stands 68½ in. high, 36 in. wide, and 27¾ in. deep, minus door and hardware (33¾ in. including). The interior shell is 49⅝ in. high, 30 in. wide, 21 in. deep.

Model JD-17 stands 65 in. high, 32 in. wide, 25¾ in. deep (31¾ in. with door and hardware). Interior shell is 46½ in. high, 26 in. wide, and 19 in. deep.

Model JD-13, designed for apartments and small homes, stands 60½ in. high, 30 in. wide, and 22¾ in. deep (27¾ in. with door and hardware). Interior liner is 42⅛ in. high, 24 in. wide, and 16 in. deep.

Open Front Stores Predicted for '75--

(Concluded from Page 1, Col. 2)
and controlling home temperatures in the same way.

A single wall—prefabricated as a unit — containing built-in appliances operated by dials and push-buttons in the kitchen, with concealed cooking units appearing at a touch.

These are some of the things industry sees as realities in 1975, according to the U. S. Chamber of Commerce. At the request of the chamber, several industries predicted what the future—20 years from now, to be exact—holds in store. The forecasts were revealed at the chamber's 43rd annual meeting here.

One of the groups participating in the project was the National Association of Food Chains. Industrial designers based their conception of the food store of 1975 on ideas supplied by the NAFC staff. The latter had checked with food chain operators.

In the 1975 grocery store, the designers predicted, only a continuous current of cold air in the summer and warm air in the winter would separate the outside and inside of the market.

The air would flow from a vent in the ceiling to a grating in the floor. The current of air would be sufficient to prevent entry of outside air, according to NAFC.

Checkout line would be eliminated by use of automatic computers which would price all items as they pass under an electronic eye.

Some of the other conveniences seen on the way by industry are: Dishwashers and clothes washers using ultrasonic waves to clean without mechanical agitation; drying by high frequency radiation; and portable thin-screen TV.

Large Appliance Dealer Says KLIXON Protectors Mean Fewer Service Calls

CHICAGO, ILL.: Mr. Irving Wolfson, Owner of Irv Wolfson Company, one of Chicago's foremost Appliance dealers, knows the value of Klixon protected motors to the dealers and user. He declares —

"Appliances with Klixon protected motors mean fewer service problems. With more and more fully automatic appliances being manufactured and sold, motor protection is important not only to the appliance dealer but also to the manufacturer and most important of all, to the user."

Klixon Protectors Reduce Service Calls and Repairs by Preventing Motor Burnouts

The KLIXON Protectors, illustrated, are built into the motor by the motor manufacturer. In such equipment as refrigerators, oil burners, washing machines, etc., they keep motors working by preventing burnouts. If you would like increased customer-preference, reduced service calls and minimized repairs and replacements, it will pay you well to ask for equipment with KLIXON Protectors.

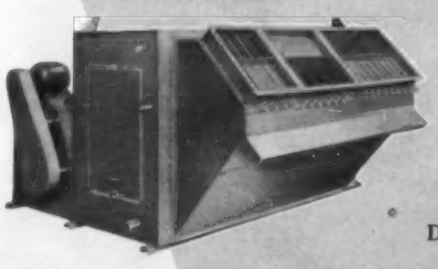
KLIXON

METALS & CONTROLS CORPORATION
SPENCER THERMOSTAT DIVISION
2405 FOREST ST., ATTLEBORO, MASS.

the BROADWAY'S having twins!

drayer-hanson's A PROUD PAPA...

A downtown L. A. department store giant, Broadway-Hale, Inc., gearing for the zooming suburban market, is building two branch beauties, simultaneously — The Broadway Valley, The Broadway Anaheim. The twins are identical! Only thing that varies is the name.



PART OF THE d-h TEAM!
FLEXAZONE

AND, both will be air conditioned for year-round comfort by Drayer-Hanson's popular heavy air-handling units — Flexazone's and HH's. Over 521,000 cfm's in all! Look at the "extras"... Electrically-welded angle-iron frame construction, vinyl-coated glass fibre insulation ... and more. Details? Request bulletins C-4.20, C-4.22.A.

Architect: Welton Becket, FAIA, and Associates, Los Angeles; Air Conditioning Contractors: Valley, F. B. Gardiner Co., Inc. Anaheim, Mehring-Hanson, Inc.

d-h SINCE 1910 drayer-hanson INCORPORATED

3301 MEDFORD STREET, LOS ANGELES 63, CALIFORNIA
(Subsidiary of National-U.S. Radiator Corporation)

KRACK KOILS
for new, old, large, medium, small applications

AIR-E-FEX SERIES
⅜, ½, ¾-inch tube surfaces
These compactly-built air conditioning coils are tailor-made to meet your dimensional or capacity requirements.
SEND TODAY FOR BULLETINS giving full details!

KRACK REFRIGERATION APPLIANCES INC.
PIONEERS IN REFRIGERATION AND AIR CONDITIONING SINCE 1931.
901 W. LAKE ST., CHICAGO 7, ILL.

A-Bomb Tests Show Industry's Role--

(Continued from Page 1)

water heater. In contrast to other furnishings with lesser structural strength, these appliances showed no damage other than scratches from the debris of other furnishings. A Servel refrigerator also installed in this house was in the same, practically untouched condition.

However, the pilot lights for the gas refrigerator and other gas appliances were extinguished by the blast effect at the 10,500-ft. mark.

A row of mobile homes (house trailers) placed at the 10,500-ft. mark from ground zero suffered considerable damage, and a couple of those which were broadside to the direction of the blast were toppled over. This included both small and large trailers. Those which were placed with their nose facing the blast did not topple, although jarred several feet out of position.

Refrigerators Undamaged

While there was considerable damage done even in the trailers that weren't toppled over, in terms of smashed-in windows and strewdabout furnishings, none of the refrigerators installed in the trailers, and from inspections made by this correspondent and Frigidaire physicist Edwin Miller, they all appeared to be ready for immediate operation.

The trailer refrigerators included a variety of types from special small models made by Sanitary and Servel, to regular models made by Frigidaire and Kelvinator and installed in the larger mobile homes. Even in one of the trailers that toppled over, the refrigerator seemed intact and not too badly damaged.

There was a Servel refrigerator installed in the two-story brick and cinder block house located at the 4,700-ft. mark from ground zero, but this house was almost completely destroyed, and the first floor was partially collapsed into the basement, and none of the brick work remained standing, so that it was impossible to even locate the refrigerator, much less inspect it for damage.

The following, then, are some of the conclusions that can be made about the effects of the explosion of a nuclear device on refrigerators, freezers, and other appliances that would be on the fringe of the "A" zone or area of total destruction, and beyond that point:

1. Refrigerators and freezers will generally prove very effective in protecting foods from both blast and radiation damage.

2. Refrigerators and freezers, and other appliances, partially because of their shape, and partially because of the rigid metal construction, generally withstood blast and missile damage very well, in places that did not suffer total destruction of the premises. In particular, there was little evidence of any damage to the operating mechanisms.

Effects on Food

What about the tests on effects on foods generally, in the Operation Cue projects? All the results won't be known for some time, because some of the foods will be fed to animals and results checked over a two-year period. But on the basis of the evidence obtained thus far, the following would seem to stand up as some general conclusions:

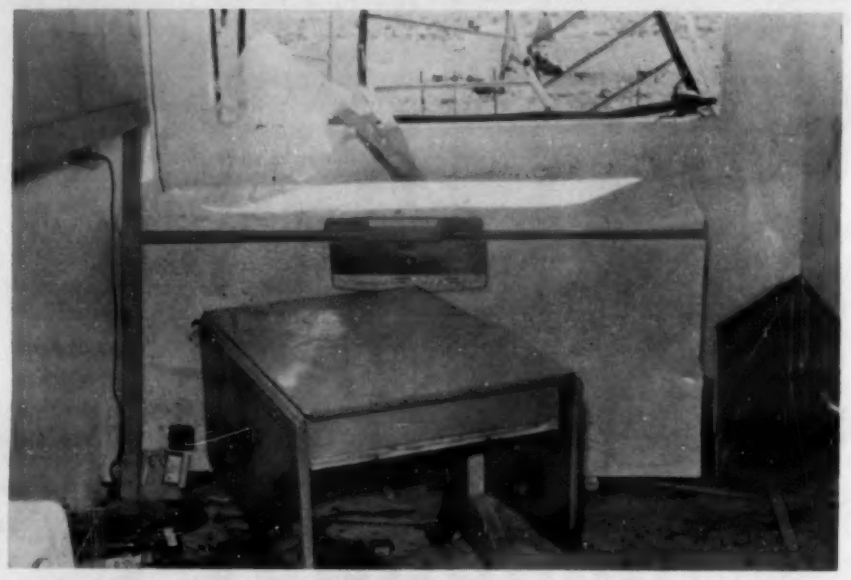
1. By inference, from the observations on food stored in the freezer, it would seem safe to assume that packaged food stored in the commercial refrigerator equipment of various types would be safe in any damage area other than that of total destruction. Even fresh meats and produce, if covered in some manner, would seem to escape dangerous radiation effects from the fringe of the "A" zone of damage and beyond.

2. Results on the food that was tested at close-in food stations—some only a quarter of a mile from the point of the explosion—will be evaluated later. In such close-in locations, the food samples were exposed to intense radiation and blast overpressures.

Since exposure to foodstuffs to high radiation flux may modify the nutritive properties and, in

(Continued on next page)

PEACEFUL KITCHEN SCENE, in one of the homes at the Nevada atomic test site, before the A-Bomb blast. Mannequin sits before a Frigidaire food freezer, which was loaded with frozen food as part of the food testing project.



APPROXIMATELY SAME SCENE AS ABOVE, AFTER BLAST had badly damaged much of the interior furnishings in the concrete slab house at the 4,700-ft. mark from Ground Zero, but had only dented the freezer. Frozen food suffered no physical damage, and was so slightly radioactive as to be immediately edible.

The long line of Precision-Built Frigidaire parts assures better, longer lasting results!

No matter what the job, you can always be sure that the right parts and accessories are available whenever you want them. For Frigidaire maintains 42 well stocked parts depots all over the country.

So when you want the right part—use genuine Frigidaire parts. You'll be sure of a job finished quickly—and without call backs due to faulty parts—also customers are assured of dependable, long lasting, quality installations.

And don't forget, parts aren't all that Frigidaire has to offer. You'll find Frigidaire District Headquarters can lend a hand on tough service problems, too.

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SALES ENGINEER with excellent sales record in air conditioning available for new connection. Desires to associate with aggressive manufacturer or distributor who is after his share of the market. Experienced in building and running dealer organization and direct selling. BOX A5242, Air Conditioning & Refrigeration News.

POSITIONS AVAILABLE

EXPERIENCED COMMERCIAL journeyman refrigeration mechanic, Friedrich & Frigidaire dealer—permanent all year job—A-1 REFRIGERATION SERVICE, 418 So. Second Street, San Jose, California.

SALES REPRESENTATIVES — Protected territories in every state selling advanced type of automotive air conditioning unit to refrigeration and automotive dealers. Revolutionary conductance surfaces make this unit superior in many respects. Wide profit margin. Write or wire INDUSTRIAL REFRIGERATION & AIR CONDITIONING COMPANY, 239 West Hicks Avenue, San Antonio, Texas.

MANUFACTURERS' REPRESENTATIVES: If you are looking for a line of cooling towers, write us for details on our line of Alumatowers. Many outstanding new features. 3 to 26 tons. Top commission. Several territories open. Replies confidential. Write JIM KNOBLOCH COMPANY, 2301 Alexandria Pike, Newport, Kentucky.

NEW OPPORTUNITIES for manufacturers' representatives operating in Chicago or southern states, who have commercial refrigeration dealer accounts, to sell fast-growing line of special and standard commercial refrigeration. Must be able to sell quality equipment. Write: Paul R. Stewart, THE C. SCHMIDT COMPANY, 1712 John Street, Cincinnati 14, Ohio.

DO YOU call on locker plants? We need coverage in this type account for our nationally-famous home freezers—we ship direct at realistic factory prices—locker operators are leading all other outlets in freezer sales. Add our freezers to your line and double your commissions immediately. TRI-STATE ELECTRIC MFG. CO., Box 836, Lima, Ohio.

DISTRICT MANAGER for Midwest—to headquarter in Chicago. Primary duty establishing new distributors and developing further sales through those already established. THE WARREN COMPANY, Box 1463, Atlanta 1, Georgia, established 1882, one of country's leading commercial-refrigerator manufacturers. Salary, incentive plan, expenses. Prefer experience in this field. State full background.

TECHNICAL MANUAL writer: permanent, full-time position for man familiar with Air Force, Army & Navy requirement for spare parts lists, operation and maintenance instruction; must have engineering background. Experience in refrigeration and air conditioning field preferred. Work New York City with moderate travel. Send resume of experience and background. Include recent earnings. BOX A5239, Air Conditioning & Refrigeration News.

ESTABLISHED AND successful southwestern air-conditioning distributor and contractor needs mechanical engineer or one with equal experience, approximately 40 years old for permanent job. Must have four years' air-conditioning application experience and qualifications to assume managerial position within reasonable time. Reply with complete qualifications and employment record to BOX A5241, Air Conditioning & Refrigeration News.

EQUIPMENT FOR SALE

BRAND NEW 1955 models completely automatic 110V. or 220V. Kesco condensate water disposal units for air conditioners at your jobbers. Famous flood-proof, trade accepted, low priced K-40 12 ft. head; K-55 17 ft. pump; available in deluxe heavy hot-dipped galvanized tank 9¼" high, 14" wide, 7" thick. Write for your nearest jobber; literature; KESCO PRODUCTS CORP., Box 84, Springfield Gardens 13, New York.

REFRIGERATION VALUES: Attention servicemen; send for our catalog of refrigeration parts; savings up to 50%. WALTER W. STARR REFRIGERATION SUPPLIES, 2833 Lincoln Ave., Chicago 13, Illinois.

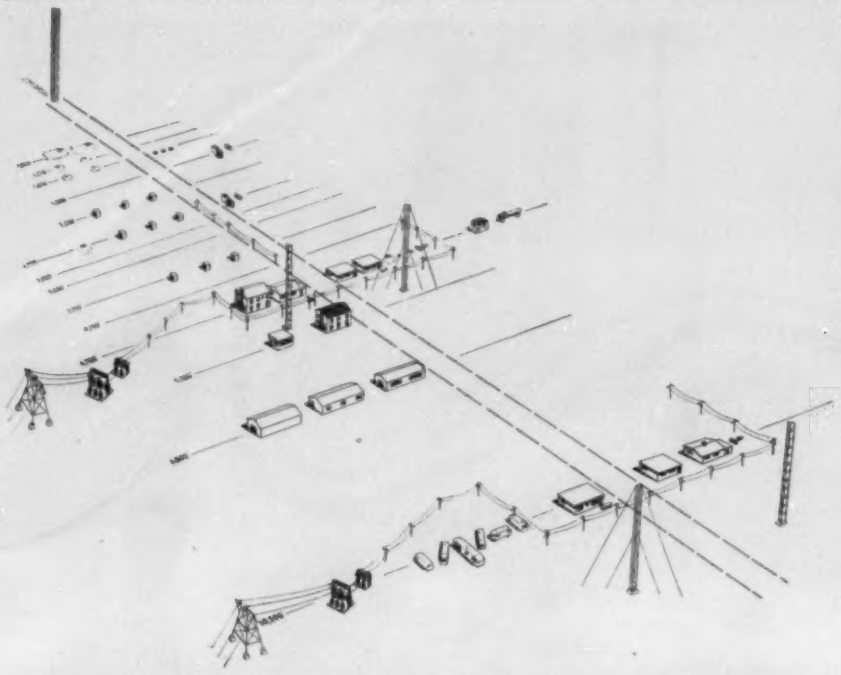
DISTRIBUTOR CLOSING out Crystal Tips ice machine inventory. Four new Model U-501 units in stock. Will sell for distributor cost, less 10%, f.o.b. Dallas warehouse. Call or write TEXAS DISTRIBUTORS, INC., 3914 Live Oak Street, Dallas 4, Texas—TEnison - 2194.

BUSINESS OPPORTUNITIES

WELL-ESTABLISHED BUTCHER supply and commercial refrigeration business established since 1925. Franchised lines. Eastern Ohio location in city of 200,000 serving an area of half million. Owner retiring. Will sell at inventory price, approximately $20,000. Address BOX A5243, Air Conditioning & Refrigeration News.

MISCELLANEOUS

PRODUCTS WANTED: A medium-sized Michigan manufacturer with precision equipment planning further expansion wants refrigeration and air conditioning products. Will manufacture or purchase manufacturing and selling rights, pay royalties or purchase products outright. This is a dynamic organization with excellent technical staff, modern facilities, top sales organization and best connections. BOX A5240, Air Conditioning & Refrigeration News.



TEST LINE AT OPERATION CUE Atomic Open Shot test at Yucca Flat. Tower from which nuclear device was exploded is at far left. First installations at 1,050-ft. line included underground group shelters and buried food storage cabinets. Four houses, plus complete electrical power transmission system and radio communications towers are shown at 4,700-ft. line. At 5,500-ft. line is redesigned frame house and commercial building of reinforced concrete construction. At 6,800-ft. line are three commercial utility-type buildings of frame and sheet metal construction. At 10,500-ft. line are three single-story dwellings, mobile homes (house trailers), and another electric transmission system.

INSPECTION OF FROZEN FOOD from freezer after the blast is made by Herman Schmitt (left) of the National Association of Frozen Food Packers and Edwin J. Miller (right), Frigidaire physicist. In addition to being undamaged, packages were still in frozen condition.

VIEW THROUGH FRONT WINDOW of home at 4,700-ft. line past debris in living room shows freezer (center rear) and refrigerater and water heater (at right rear) in somewhat battered condition, but in place and ready to go back into operation with relatively minor repairs.

Food Preservation, Proper Shelters--

(Continued from preceding page)

certain cases, even create toxic substances in the food, long range animal feeding tests will be conducted—up to two years in some cases—with monkeys and rats.

However, from the results indicated in the Operation Cue tests, it would seem likely that even in areas that suffered high damage, foodstuffs that were given some protection by storage within an enclosure within a building (such as a walk-in or reach-in cooler, or closed display case) might have a much better chance of remaining safely edible.

The results of tests on group shelters, designed particularly for use by industrial establishments whose personnel for various reasons could not be evacuated before the nuclear device explosion occurred, had not been completely evaluated at the time your correspondent visited the damage area, because the shelters were located so close to "ground zero" that the area was still hot.

These heavy-duty shelters, intended to hold 50 persons, were tested under an intended pressure of 100 lbs. per sq. in. at 1,050 ft. from ground zero.

The two shelters were 5 to 6 ft. below ground level and were chambers 12 ft. by 25 ft. by 6 ft. high and constructed of reinforced concrete. They were equipped with a 3-ft. by 3-ft. escape hatch, and provided with ventilating means.

Preliminary survey of the results indicated that such mass shelters provided generally adequate protection against blast and missile damage. How much protection they afforded against the various types of radiation effects had not been determined.

From what this correspondent could observe, there seemed to be indications that the air conditioning industry could contribute to the future design and production of such mass shelters by providing improved ventilating and air filtering equipment.

The ventilating equipment would be important in the crowded mass shelters in the period of alert before the attack occurred; it might prove useful in the period after an actual explosion, provided some form of power were to be available.

Filtering equipment would seem highly desirable after the explosion, particularly if it were the type that would reduce the effects of radiation. Furthermore, one of the things that impressed this observer most among the aftereffects of the explosion was the long time that the dust pall hung over the area. Even if this atmosphere were not highly radioactive, it would be difficult to move around in, and it might seem desirable to

(Concluded on next page)

THERE WAS VERY LITTLE DAMAGE to any appliances in houses at the 10,500-ft. line, although there was some blast damage to the houses themselves, and to the other furnishings. Here Editorial Director Phil B. Redeker, an observer at the Atomic Open Shot tests, looks over a Frigidaire refrigerator that remained in perfect condition and working order.

PA® 400

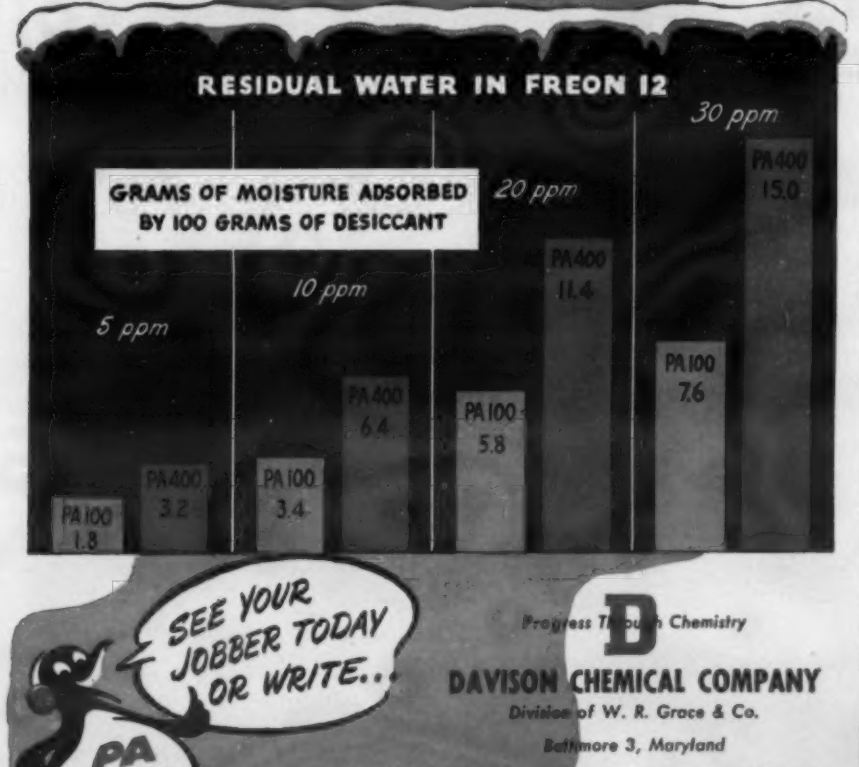
DAVISON'S NEW Refrigeration Desiccant

WITH GREATER MOISTURE ADSORPTION CAPACITY

Up to 98% increase in moisture capacity

The Davison Chemical Corporation has long been a leading producer of refrigeration desiccants and the manufacturer of PA 100 — the top desiccant in the field. Now, after many years of research, they have produced PA 400 — a refrigeration desiccant with a greatly increased adsorption capacity.

Tests run on the moisture adsorption capacity of PA 400 in Freon-12 in comparison with Davison's PA 100 show up to 98% increase in capacity.



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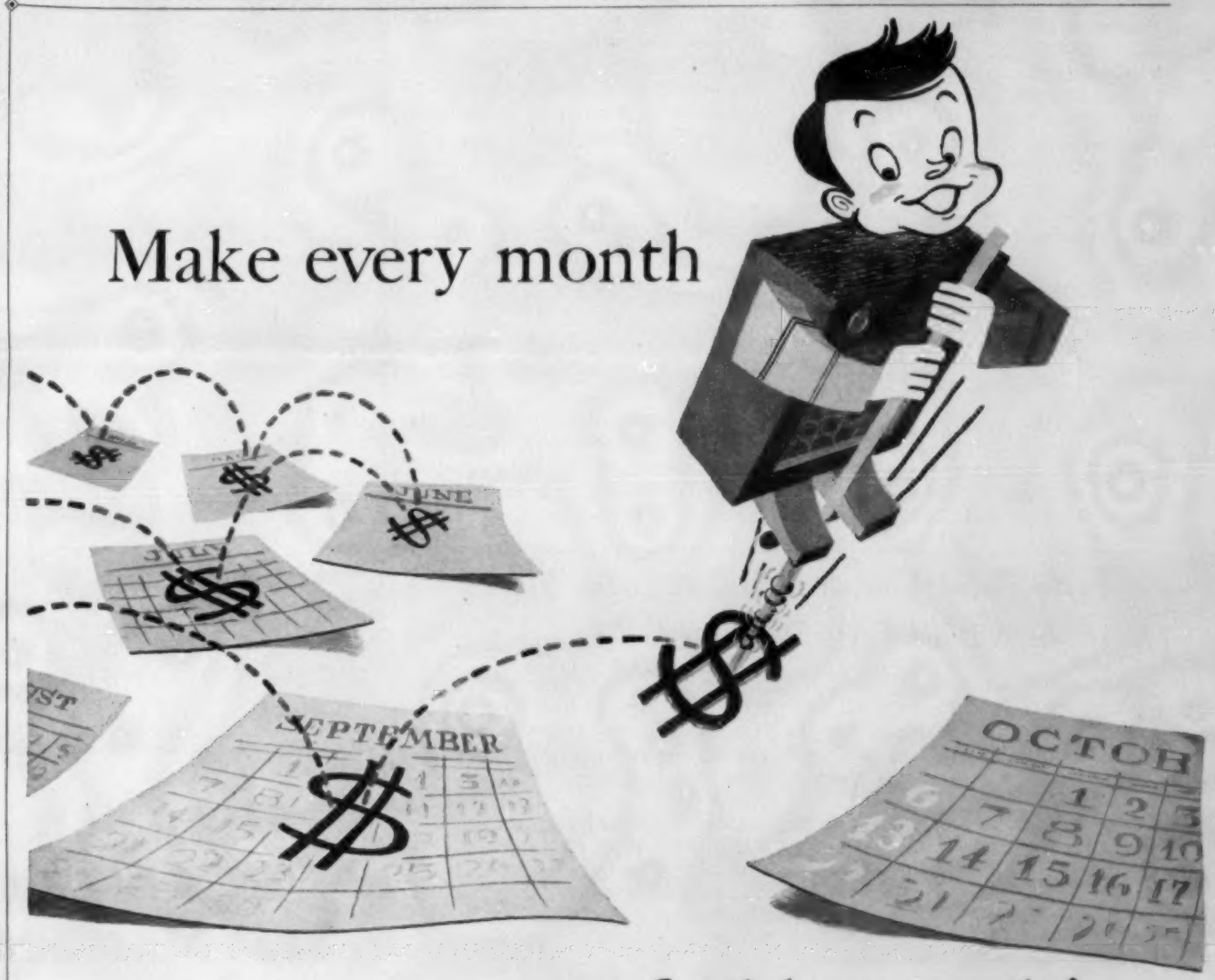

a profitable month!

Sell Fiberglas Dust-Stop Filters the year round—it's easy with the Reminder Service Plan!

The filter replacement market is a year-round proposition. When the heating season is over—it's time to change filters in air conditioning units. When the summer season comes to an end, it's time to change filters in the heating system. You can get this business and eliminate "nuisance" calls by setting up a tickler file and using the proven Reminder Service Plan. Besides selling Fiberglas* Dust-Stop* Filters for you the *easy way*, it leads to full service contracts and future unit sales!

Fiberglas Dust-Stop Air Filters are the preferred filters—their unique construction permits depth penetration of dust, prevents surface loading. They assure customer satisfaction, bring in repeat sales. Ask your Dust-Stop Filter distributor for the full details on the Reminder Service Plan.

ANOTHER SALE on every call is possible if you push Fiberglas Duct Insulation. Comes in a complete line . . . rigid or flexible, faced, coated or uncoated for use inside or outside ducts. Has superior thermal and sound absorption efficiency. Owens-Corning Fiberglas Corporation, Dept. 107E-16, Toledo 1, Ohio.

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DUST STOP AIR FILTERS

*Fiberglas and Dust-Stop are trade-marks (Reg. U. S. Pat. Off.) of Owens-Corning Fiberglas Corporation.

Nationally known—nationally advertised in magazines, newspapers and on television, reaching owners of air conditioning equipment in the residential, commercial and industrial markets.

ANY THOUGHT THAT THE NUCLEAR DEVICE EXPLODED in "Operation Cue" didn't pack a real "atomic punch" should be dispelled by these two pictures. Above is part of the wreckage of a two-story brick-and-frame construction house at the 4,700-ft. line, which was practically totally demolished by the blast. (Below) Two-story redesigned frame house at the 5,500-ft. line was practically wrecked beyond being habitable. Wood on front of house is blackened by "charring" effect of thermal radiation, which is described in articles in this issue.

Power Problems In A-Blast--

(Concluded from preceding page)

keep personnel in the shelter until this subsided. Furthermore, they might be kept in shelters until decontamination teams had determined that the surrounding area was safe.

It might be important for industry to put up such shelters on their own volition. For, as one industrial representative put it:

"The defense department will surely favor those who will be able to demonstrate that they can get back into production the fastest after an attack that does not damage their facilities too greatly."

One of the projects in the Operation Cue tests that would be of interest to the industry was that of the damage effects on an electrical power system.

Two identical power systems were erected, tested, and were in complete operating condition, to simulate service to the buildings. The power system consisted of a typical high voltage transmission line on steel towers connected to a conventional transformer substation. This was in turn connected to typical overhead distribution lines on wood poles.

Service drops supplied electricity to equipment in two residences.

This typical equipment which would be found serving residential or industrial areas was installed at the 4,700-ft. line. A duplicate test system was erected at the 10,500-ft. line to determine equipment survival range for comparative purposes.

After the explosion, all the damage to this utilities system was at the installation 4,700 ft. from ground zero. The transmission line was down, and 30% of the distribution lines were down. The portion of the secondary system which was operating during the time of the explosion was no longer operable afterwards.

This damage appeared to the observer to be from blast and missile effect.

Service Could Be Resumed In 8 Hours

However, the substation appeared to be in operable condition with all major units standing. The primary lines were not broken. And the official survey said that secondary lines which were broken could be replaced very quickly. It was estimated that if power supply were available, service could be resumed on the system at the 4,700-ft. line within an 8-hour period.

Liquid Petroleum Equipment Was In Good Shape

There was no apparent damage to the installation on the 10,500-ft. line.

Liquefied petroleum gas equipment tested in the Operation Cue operations came through the test in good condition. No liquefied petroleum gas container was ruptured or punctured. Those located at the 1,840 and 2,750-ft. lines suffered some minor damage. However, both 500-gal. tanks at these forward points had their L-P gas contents available for immediate use.

Seven of the eight cylinders were likewise available for service, although they were displaced some distance from their original locations; the eighth had its shut-off valve sheared off by the impact of the blast.

The major damage to the L-P gas equipment was occasioned by the blast itself. Thermal damage appeared non-existent, as there was no evidence of fire. However, in this respect, it must be noted that there was no open flame equipment operating off the liquefied petroleum equipment at the time.

LOOKING INTO ONE OF THE MOBILE HOMES (house trailers) stationed at the 10,500-ft. mark, there is considerable evidence of blast damage, but the refrigerator is undamaged and in operating condition.

Taste Panel Consumes Frozen Foods Stored In A-Blast Test, Finds Little Change

The nine-man taste panel of quality control and research experts "tasting" at a special meeting in Los Angeles May 10, decided that the 40-kilotron atom bomb fired at Yucca Flat May 5 failed to appreciably change the flavor and color of frozen foods stored in the mock city at the Nevada test site.

Buried Food Little Better Than Freezer Stored Items

Samples of codfish, strawberries, orange juice, peas, chicken pot pies, and French fries were exposed in a 17½-cu. ft. home freezer located in the kitchen of a single-story, concrete slab house 4,700 ft. from ground zero. Other samples were buried just beneath the soil in an insulated box 1,270 ft. from ground zero.

H. P. Schmitt, research director of the NAFFP and project officer for the atomic exposure of frozen foods, said the taste test showed "very little difference between the samples positioned at 1,270 ft. and those at 4,700 ft."

"This is of particular interest," he said, "in view of the fact that the buried metal box at 1,270 ft. was still 'hot,' to the point where it could not be recovered until two days after the shot when the foods showed only nominal radiation.

"The radiation in the samples was comparable to that of a radium watch dial," Schmitt said.

Grading was done on a one-through-five basis relating to: no trace of off-flavor development or color loss, a slight but noticeable loss, noticeable but insufficient to classify as substandard, objectionable but still edible, and substandard.

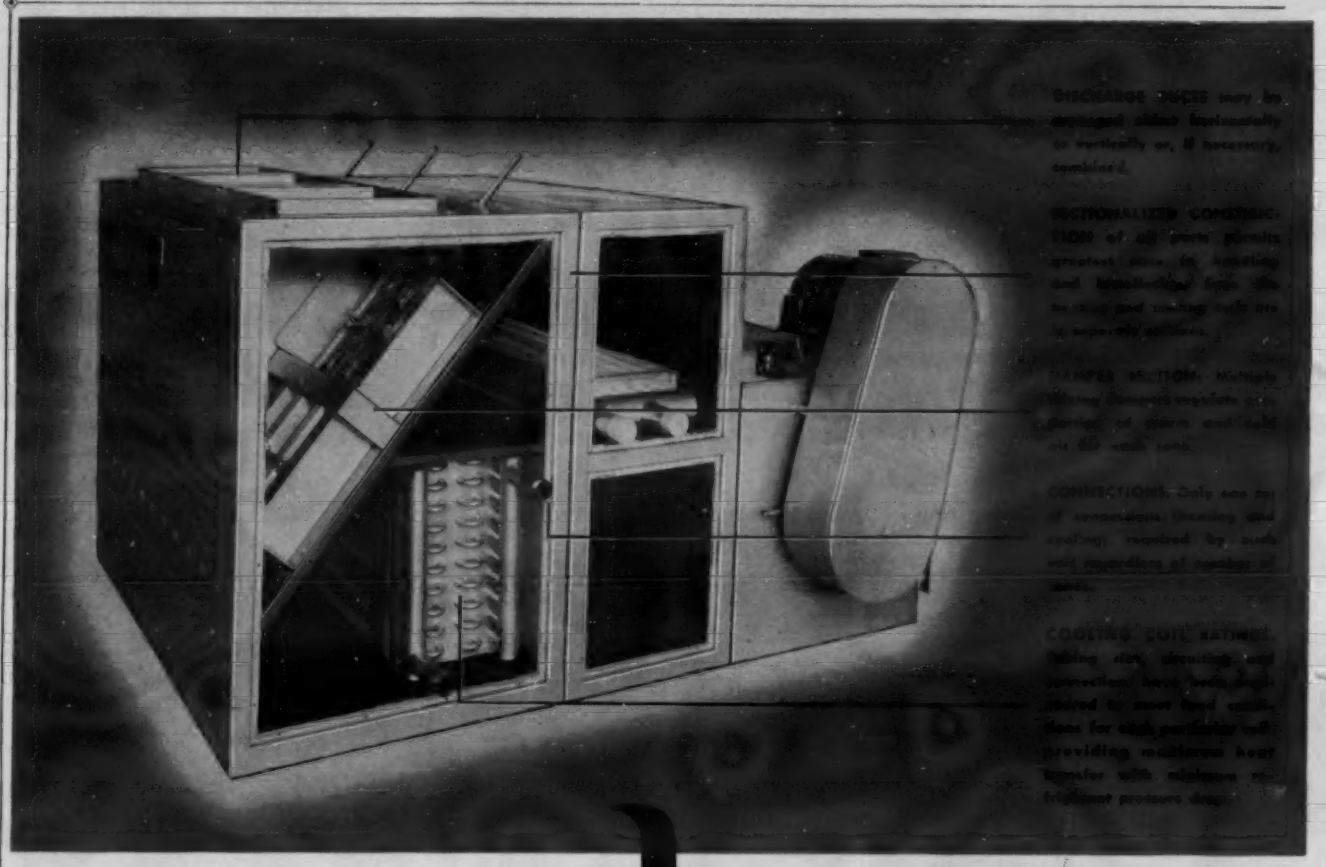
Most of the scoring—about 95% —centered in the Numbers One and Two categories, with the large majority being Ones. The scattered Threes were noted in color and flavor. There were no Fours or Fives.

If You Can Get To Freezer Foods Are Probably Safe

"In event of an atomic attack, the housewife can be assured that frozen foods are safe to eat," Schmitt said. "This, of course, is contingent on the size of the bomb and the distance of her home from where the bomb hit. But, if it's possible to get to her home freezer after a bomb has hit, it would appear at this point that the frozen foods would be perfectly safe to eat."

All frozen foods used in the panel were approved for removal from the bomb site by authorities, Schmitt said. "Actually, none of the samples were physically damaged and all were still frozen when recovered," he said. "The foods came out much better than the houses.

Most of the samples, except those which Schmitt brought to Los Angeles, have been shipped to the Wisconsin Alumni Research Foundation in Madison for scientific nutritional testing.



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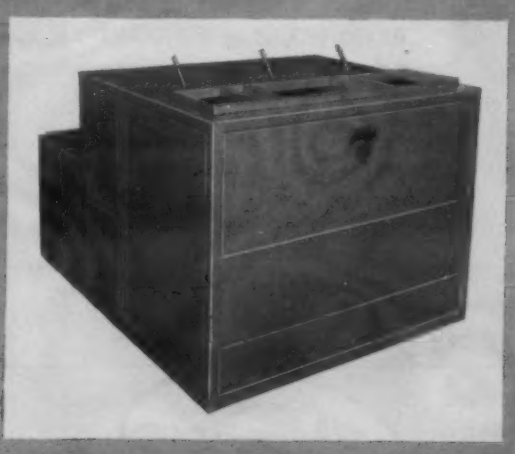

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